Second Report showing the progress made in giving effect to the recommendations of the Royal Commission on Agriculture in India up to the 31st December, 1930.

Part II.—Local Governments and Administrations.

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PART II.

Statement showing the progress made by local Governments and Administrations in giving effect to the recommendations of the Royal Commission on Agriculture in India, with which they are concerned, up to the 31st December, 1930.

N.B.—*Provinces which are not specifically mentioned against a particular recommendation have nothing new to report.*

Subject (with paragraph of the Report)	Action taken by the Government (or Administration).
CHAPTER III.—The organisation of Agricultural Research. 1. Constitution of Provincial Committees to co-operate with the Council of Agricultural Research (paragraph 57).	**Bombay.**—A Committee consisting of official and non-official gentlemen was constituted in June 1930 to advise Government on programmes of agricultural research to be submitted to the Imperial Council of Agricultural Research, on applications from persons within the Presidency for grants from that body and also on any scheme or project which may be referred to it by Government for opinion. **Bengal.**—A provincial Agricultural Research Committee has been constituted as contemplated by the Royal Commission. **United Provinces.**—An Agricultural Research Committee was constituted for a period of one year with effect from November, 1929, and has since been reconstituted for a further period of one year. It is pre-eminently a committee of scientific experts and is presided over by the Hon'ble Minister for Agriculture. Three meetings have so far been held and several schemes of public utility have been considered and recommended to the Imperial Council of Agricultural Research for financial assistance. **Punjab.**—A Punjab Council of Research has been formed. Its members include both the Director of Agriculture and the Director of Veterinary Services and several members of the staff of the Punjab University. **Burma.**—A provincial committee to co-operate with the Imperial Council of Agricultural Research has been constituted under the name of the Burma Agricultural Research Committee with the Hon'ble Minister for Forests as Chairman. **Bihar and Orissa.**—A provincial committee has been constituted consisting of 10 official and 6 non-official members with the Hon'ble Minister in charge of the Agricultural Department as President. This Committee considered amongst others two important schemes, *viz.*, of rice and sugarcane research, which have since been submitted to the Imperial Council of Agricultural Research. **Central Provinces.**—Steps have been taken to constitute a provincial Council of Agricultural Research as a Sub-Committee of the provincial Board of Agriculture. **Assam.**—A provincial committee was appointed by Resolution on 15th April, 1930, consisting of— (1) Director of Agriculture, Assam ; (2) Superintendent, Civil Veterinary Department, Assam ; (3) Three non-officials. **North-West Frontier Province.**—In a scheme now being considered by the local Administration for the development of agriculture the question of the formation of a local committee is being kept in mind. **Coorg.**—A committee has been constituted to advise the Chief Commissioner on the needs of agriculture in Coorg.
CHAPTER IV.—Agricultural Improvement. 2. Progress of Research Work on Soils and Soil Conditions (paragraph 78).	**Madras.**—A Soil Physicist has recently been appointed on Rs. 250—25—750, for a period of one year in the first instance, to study the methods of treatment and management of soil so as to render it capable of retaining the maximum amount of moisture and the effect of different cultural operations.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*contd.*	**Bombay.**—The importance of soil study in connection with agriculture has long been recognized and in recent years this study has received a great impetus on account of the establishment of the International Commission of Soil Science. The Agricultural Chemist and the Soil Physicist in the Presidency are co-operating with this institution. The Agricultural Chemist has recently undertaken the study of *Karl* Soils in the Karnatak and has published a very useful bulletin (No. 160 of 1929) "Soils of the Bombay Presidency". Research work on soils and soil conditions in Sind, with special reference to post-Barrage conditions of irrigation and agriculture, is being carried out by the Chemical Section of the Agricultural Research Station, Sakrand, since 1926. This Section is in the charge of a Soil Physicist and Chemist and the work is directed and controlled by the Chief Agricultural Officer in Sind since his appointment in June 1930. During the past year, progress has been made in experimental work directed towards the solution of the problems of '*kalar*' formation in Sind soils under perennial irrigation and the reclamation of "kalar" lands. In addition, investigations are in progress with the object of ascertaining the most economical means of maintaining soil fertility under the more intensive systems of cropping which will come into force with the advent of the Lloyd Barrage Irrigation Project. The Agricultural and Irrigation departments are co-operating in the further development of research work on soils and soil conditions in Sind, especially in the Barrage areas. **United Provinces.**—The question of accumulation of nitrate in the soil during the various seasons is being investigated. Research work on soil conditions, with particular reference to rice, is awaiting the provision of funds for the establishment of a rice research station. The scheme is being considered by the Imperial Council of Agricultural Research. **Punjab.**—The action taken on this recommendation has already been noted in the previous report. Since then, soil surveys of new areas to be colonised in the Lower Chenab Canal Extensions and the Haveli Project and of the tract below the Salt Range have been conducted. **Bihar and Orissa.**—Studies on the nature of acidity of the Chota Nagpur soils and of the marine border lands in Orissa, and on the changes in the free and exchangeable acidity brought about by different treatments of manuring and by liming are in progress. A study was also made of the amount of nitrates present in different layers in the soil on different dates. Work has been started on the re-actions in soils under sugarcane on the Sepaya Farm in North Bihar with a view to try and establish a connection between disease in the improved varieties of cane and the conditions of soils in which these are grown. This work includes the study of the rise of alkali salts and a consequent displacement of lime salts from the soil, wilting and yellowing of some of the new varieties of canes introduced from the Coimbatore Sugarcane Research Station. **Assam.**—The depletion of the soil is not so marked in Assam as in some other provinces. Since the retirement of the Agricultural Chemist in 1923, only routine analyses have been possible. The resources of the province do not permit of the engagement of a qualified chemist at present. **Coorg.**—The question is under consideration.
3. Soil Erosion (paragraph 79). (Special to U. P., Bombay, Punjab, Bengal and B. and O.)	**Bombay.**—In the Presidency proper, there are at present three sanctioned posts of *bunding* (*bund*-dam) officers and on account of the increased demand arrangements are being made to train some Graduate Assistants in this line of work. *Bunding* and land development classes are held and it has been found that the response from the agriculturists is so great that it is very difficult to cope with the work. Training in this line is also given to the Circle Inspectors and special *Tagai* (loans) clerks of the Revenue Department in the Bijapur District. During the last two years more

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*contd.*	than 400 applications for *tagai* for bunding were received from four districts in the Deccan. Work on grass lands has shown the great value of small embankments. No action is required in this connection in Sind where problems of soil erosion are not of importance. **Bengal.**—A scheme for afforestation experiments in Western Bengal has been administratively approved but owing to the present financial position it has not been possible to provide funds for it. **United Provinces.**—The position is much the same as stated in the previous report; the work which is being done by the Forest Department being still mainly in the experimental stage. A method has still to be evolved which will make the first method of closure, referred to last year, either financially possible for Government or sufficiently attractive for land-owners to take up themselves. Much of the eroded land will not support tree growth of sufficient value to repay the cost of its establishment and timber, though appreciated as fuel, has no great money value in rural areas. Similarly, grass and improved grazing facilities are indirect benefits which only produce an actual direct increase of revenue when close to large towns. The most interesting work done in the period under report has been experiments in the introduction of bamboos and *bab* grass in these areas with a view to obtain early and annually repeated returns Felling of the earlier afforested areas on a short rotation is also being tried where the prospects of growing large trees are at present poor. The proposal to retain the third temporary circle of superintendence of the Sarda Canal with a view to investigate, *inter alia*, the question of soil erosion, which was referred to in last year's report, has been found impossible owing to the prevailing financial stringency. A suggestion that it might be feasible to utilize existing ravines and prevent their further extension by closing them with an embankment, filling them from canals at times of slack demand for water, and using the water so stored at times of intense demand for water for irrigation purposes, is being examined in conjunction with the hydro-electric development scheme. **Bihar and Orissa.**—High level contour *bandhs* (dams) for storing rain water are beng successfully made in the Chota Nagpur Division and similar work is being extended in the hilly parts of the Bhagalpur and Monghyr districts. A *bandh* supervisor and an *amin* have been appointed for the purpose of carrying out surveys and fixing the proper alignment of *bandhs*. But owing to a temporary paucity of staff it was not possible to take any action on the proposal to depute an officer of the Agricultural Department to examine the Bombay system in order to ascertain whether any improvements could be effected in the methods at present adopted in Chota Nagpur. **Assam.**—Soil erosion as an agricultural problem in Assam chiefly affects the hill areas, where the practice of *jhuming* or shifting cultivation, causes much surface loss. To such extent as is practicable efforts are made to teach the hill people to take to irrigated crops. Work on these lines has been extended to the North Cachar and Naga Hills, and the expenditure budgeted under this head is Rs. 5,600 in 1931-32 as against Rs. 3,357 in 1926-27. In many parts of the hills, however, *jhuming* is the only practicable method of cultivation, and the staff necessary to see that it is done on the lines which both cause least damage and produce the best crops are not available. In the plains, this erosion results in the silting up of river beds which thus fail to scour their channels and tend to be uncertain in course. River training on a large scale is not at present practicable. The formation of a waterways division of the Public Works Department, which would enable a beginning to be made with enquiries into problems of this nature is held up for lack of funds and the refusal of the local Legislative Council to accept a Drainage and Embankment Bill.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*contd.*	
4. Work on Fertilisers (paragraphs 80—93).	**Madras.**—The Imperial Council of Agricultural Research has made a grant for the entertainment of staff to collect the existing data regarding manurial experiments hitherto conducted on the various research stations. The grant has been accepted and the staff will be appointed with effect from 1st March 1931. A proposal is under consideration to conduct manurial experiments on various research stations to determine the most suitable form to supply nitrogen, phosphoric acid and the quantity of each that is required in conjunction with and without green manures for crops on wet lands, dry lands and garden lands. The district staff are carrying on propaganda regarding (1) the better method of preserving cattle manure, (2) making "composts" of waste materials and (3) using organic manures in conjunction with inorganic manures. Growing of green manure crops is being advocated and ryots are also encouraged to grow green manure crops to sell seeds. Leaflets are distributed explaining the exemption of water-rate for growing green manure crops. The construction of the activated sludge plant at Coimbatore has been completed. The fish manure industry is in an unsettled condition owing to the spasmodic appearance of the shoaling fishes of the coast. The fishing season has been a failure for the past six years on the West Coast and the fishing industry has, therefore, considerably declined. The Fisheries Department's trawler "Lady Goschen" has demonstrated that fishes of better quality and larger quantity are available in deeper waters on the East Coast also, at any rate during the period of survey. Government have sanctioned an Assistant Biologist and staff to work on board the trawler at an annual cost of Rs. 3,804 and additional equipment for the fisheries research stations at West Hill and Krusadai Islands at a cost of Rs. 11,440. A scheme of research on sardine fishery and the fish manure industry drawn up at the instance of the Indian Fertilisers Committee is under preparation and will be placed before the Council of Agricultural Research. As regards turning of nightsoil into poudrette, the Public Health Department is carrying out certain experiments for the disposal of nightsoil using ashes and street sweepings in the treatment. The system analogous to the one obtaining in Bradford in England is being adopted as an experiment in Mangalore. **Bombay.**—In the Presidency proper, a very large number of experiments in connection with the several manures, *e.g.*, farm yard manure, night soil, fish manure, green manure with *Sann Hemp*, other leguminous crops, denatured salt, artificial manures, oil cakes, etc., have been conducted so far and the results have been published in the form of bulletins or leaflets which are distributed free to cultivators. Similar experiments have also been conducted with the artificial fertilizers of recent origin, *e.g.*, Calcium Cyanamide, Calcium Nitrate, Ammophos, Diamophos, etc., etc., in co-operation with commercial firms and also from the grants of the Sir Sassoon David Trust Fund. The Agricultural Department has also taken steps in moving the railway authorities to grant concession rates for manures and several railways have co-operated to a large extent in this connection. The Department is carrying on, as usual, active propaganda for use of these proved manures with the existing staff. In Sind, the question of the manurial problem, especially under post-Barrage conditions of irrigation, is receiving the closest attention. Manurial experiments in some cases in co-operation with commercial firms are being laid down at the principal experimental and demonstrational farms. This work will be greatly intensified when perennial irrigation is in force after March, 1932.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*contd,*	Much attention has been given during the past year to the utilization of crop residues, waste materials, etc., for the production of "compost manures" on a large scale according to the method worked out by Mr. Howard at the Institute of Plant Industry, Indore. This system has been introduced at the Agricultural Research Station, Sakrand, and is in full working order. It is demonstrated to zamindars on all possible occasions and a leaflet thereon is in course of preparation. Arrangements have been made for its introduction on all Government farms in Sind next year under the direction of experts from the Institute of Plant Industry, Indore. The cultivation of leguminous crops, *e.g.*, lucerne and *berseem*, and of green manure crops for manurial purposes is being advocated vigorously by the Agricultural Department and is common practice at all Government Farms. A special series of experiments with bonemeal on various crops has been started at the Agricultural Research Station, Sakrand. Work on the extension of other fertilisers will be taken up as a result of future experimental work, but, at present, it has been deemed advisable to concentrate upon the systems of supplying the manurial requirements of crops referred to above. **United Provinces.**—Experiments with *sanai* as green manure confirmed the satisfactory results previously obtained and have placed a cheap manure within reach of the ordinary cultivator. The use of concentrated and artificial manures is increasing, *mahua* cakes, sulphate of ammonia and nitrate of soda being the most popular. Storage of village refuse in pits, for use as manure, is making fair progress and Government are encouraging this as much as possible. Efforts made through co-operative societies to induce members to preserve manure in pits outside the *abadi* (inhabited portion of the village) met with a fair measure of success, the practice having been adopted in 900 villages. The work at the Harcourt Butler Technological Institute on the manufacture of composts and artificial manure from city refuse continued for a time and papers on the subject, by three members of the Institute staff, were read at the Indian Science Congresses of 1929 and 1930. The scheme for an activated sludge plant at the Agricultural College, Cawnpore, and for that city, has not progressed. The use of bonemeal as manure has made no headway. The oil department of the Harcourt Butler Technological Institute continued to advise and assist proprietors of oil mills regarding the disposal of oil-cakes. Numerous inquiries were answered and assistance given by personal visits. **Punjab.**—Work on manures has been extended. **Bihar and Orissa.**—Systematic field trials on manuring are being continued in most of the departmental farms where the different manures and fertilisers are being compared and also the best time of application and the optimum rate of nitrogen to phosphoric acid are being tested. Permanent plots have been laid out in several of the farms in the Orissa and South Bihar Ranges where the action of fertilisers with or without organic manures is being tried on rice and on *rabi* crops both under irrigated and unirrigated conditions. Investigations are being continued in the methods of making artificial farm-yard manure from refuse straw, sugarcane trash and other vegetable refuse using cattle manure as a starter. The results on the departmental farms show that *ammophos* for rice and ammonium sulphate alone or with *ammophos* for sugarcane and potatoes are very suitable and the demand for these fertilisers is spreading rapidly among the cultivators. The manufacture of artificial farm-yard manure has given very encouraging results and it will form a subject of district propaganda in the future. The Agricultural Department has issued a bulletin containing a summary of improvements in agriculture recommended by the department and it is hoped that it will be of some assistance to the general public. A grant of Rs. 1,650 from the Imperial Council of Agricultural Research has enabled work to be started in the collection of data on manurial experiments conducted on Government farms in the province. A Deputy Director of Agriculture has been put on special duty for the purpose.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*contd.*	
	Central Provinces.—The use of fertilisers is being demonstrated on a still wider scale. All past experimental work has been collated and examined statistically, the work being aided by a grant from the Imperial Council of Agricultural Research.
	Assam.—The existing staff is inadequate for a systematic and comprehensive enquiry into fertilisers. Attention has been mainly given to trial of manures which might prove of immediate economic value, and the results have not been systematically recorded. The offer of the Imperial Council of Agricultural Research to subsidise the systematisation of results has been accepted and the economic value of the more important commercial manures will be tested on the three special crops—rice, sugarcane and potatoes in the farms. Cowdung is not used to any extent as fuel in Assam. Continuous efforts are being made by the department to teach and encourage the better conservation of natural manures. The present methods of disposing of night soil from the towns, *viz.*, removal by carts to trenching grounds, do not favour any experiment in the use of night soil as a manure other than that now in vogue of permitting crops to be grown on the trenching grounds when resting. The towns are small, removal is not always by any means complete or satisfactory, and the trenching grounds are often inconveniently situated. The matter of conversion into sludge for agricultural purposes will be considered if any schemes for water borne sewerage become practicable. The case of Shillong is under investigation.
	Baluchistan.—No work has yet been done but fertilisers have been obtained and experiments on a small scale will be carried out next year.
	Delhi.—To get the cultivators acquainted with fertilisers, the effect of application of nitrate of soda on tobacco was demonstrated on three plots. The sub-plots treated with nitrate of soda gave 30 per cent. profit on the investment for the purchase of nitrate of soda.
5. Introduction of Improved Varieties of Crops (paragraphs 97-103).	**Madras.**—Attempts are being made to form village agricultural associations to multiply seeds of improved varieties of crops. Advances are given under seed farm conditions to a few selected ryots to grow crops of improved varieties. The produce is purchased from them and sold to ryots.
	Bombay.—In the Presidency proper, the establishment of a new station for wheat breeding and the multiplication of improved wheat seed in the Nasik District, referred to in the last report, could not be proceeded with for want of funds. With the existing facilities as regards staff and funds, the work on *jowar* breeding is carried on at Mohol in the great rabi growing tract of South-East Deccan. In the Southern Maratha Country, the Cotton Breeder has bred a new hybrid variety of cotton "*Jayawant*" to replace D1 cotton which was found to be susceptible to wilt. Similarly the Cotton Breeder in Gujarat is exploring ways to produce a better cotton than 1027 A. L. F. The Cotton Breeder in Khandesh is watching the behaviour of *Banilla* cotton which is in great demand by the cultivators and the trade. These Breeders are also dealing with other crops, *e.g.*, *jowar*, *bajri*, groundnuts, etc. The Agricultural Department is also co-operating with the Imperial Cane Breeder, Coimbatore, in testing new strains of sugarcane in order to find a better cane than *Pundia*. The distribution of the improved varieties of cotton in the Southern Maratha Country is being carried out by the Agricultural Department in co-operation with the Co-operative Cotton Sale Societies. The Indian Central Cotton Committee has subsidised several schemes of cotton seed distribution and multiplication in Gujarat, Southern Maratha Country and Khandesh.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV. Agricultural Improvement—*contd.*	In Sind, in addition to the work of popularising and extending the cultivation of improved varieties of crops, already in progress, research into the further improvements of all the main crops which will be grown in Sind under the Lloyd Barrage is being prosecuted vigorously at the Agricultural Research Station, Sakrand, and at other Government farms in Sind. At Sakrand, the cotton, *jowar* and wheat crops are being dealt with. Rice work and *bosi* wheat work is being carried out at Larkana and Jacobabad, respectively. Valuable improved varieties of all these crops have been obtained. Certain of these improved varieties are now being grown on a large scale in the districts ; others are undergoing seed multiplication for early future extension and others are being tested on the Government farms and on zamindars' lands for their suitability for extension in the future. No improved variety of crop will be given out to cultivators unless it has been fully tested under district conditions of cultivation. The Chief Agricultural Officer has given very close attention to the existing organisations for the extension and distribution of the seed of improved varieties of crops and to the policy to be followed in this connection in the future. In general, it has been decided to concentrate this work in selected areas chosen for their special suitability for such work, to utilise to the full the assistance of co-operative organizations and to maintain annually a central supply of controlled pure seed upon which extension will be based and from which distribution will radiate. Special efforts are being made to develop seed farms, both departmental and private, especially in the Barrage areas. Government have sanctioned a scheme for the establishment of six new " Auxiliary Government Farms " at different centres of the Barrage area and at these farms the production of pure seed of improved varieties of crops will be an important function. Three of these " Auxiliary Farms " at Dadu, Paddidan and Oderolal are in course of layout and construction. With regard to the extension of the seed of improved varieties of cotton in the Barrage areas, the Chief Agricultural Officer submitted a scheme to the Indian Central Cotton Committee who made a grant of Rs. 93,000 spread over three years for assisting in this work. The other recommendations of the Commission in this connection are under consideration. Special efforts have been made to obtain the interest and co-operation of trade and commercial interests in this side of the activities of the Agricultural Department. **United Provinces.**—Improved seed is now issued from 249 seed stores and 1,118 private farms. The Co-operative Department is assisting in popularizing the introduction of improved varieties by practical work and propaganda through co-operative societies. It has not proved possible to place an officer in charge of the work of distributing improved seeds exclusively, although seed distribution has been the chief item of the Agricultural Department's activity in the past. The area sown with improved seed of all kinds introduced by the Agricultural Department is estimated to be 2,538,000 acres and the money value of the additional returns to the cultivator in a normal year is estimated to be 769 lakhs of rupees. The most striking feature of this work is the large increase in the area under improved varieties of sugarcane which are the outcome of many years of research at the Shahjahanpur farm. Nearly 37 per cent. of the total area under this crop has been planted with improved varieties, and in tracts where attention could be concentrated, improved varieties have practically driven out indigenous canes. The question of co-operative storage of seed was taken up by the Co-operative Department on a small scale, but the phenomenal drop in prices of grains resulted in the failure of the experiment. **Punjab.**—Research on millets and oil-seeds crops has been expanded and a separate botanist for oil-seeds has been appointed.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*contd.*	**Burma.**—The Local Government have approved a scheme for providing additional major seed farms in the province at an estimated cost of roughly Rs. 12 lakhs, spread over a period of four years, but the rate at which effect is to be given to the programme depends on the state of the provincial finances. The Director of Agriculture has also been instructed to look out for new areas with a view to increasing the dry zone seed farms. He has also been instructed to report at the end of March, 1932, on the recommendation regarding the formation of a separate organisation for seed distribution and seed testing under a Deputy Director of Agriculture. The recommendation that seed farms and the work of seed distribution should be self-supporting is not strictly possible of achievement in Burma. If grazing ground seed farms are taken into account and the rents from them are credited to the farms' account, the seed farms in the province, taken together, are self-supporting. Although it may not be possible to carry out the recommendations literally at present, the Director of Agriculture has been asked to instruct the departmental officers to bear the recommendations in mind and use their endeavours to give effect to them. The Financial Commissioner has been asked to report the results of his enquiries as to the financial arrangements and procedure of the seed and implement advance which has now been increased from Rs. 2,00,000 to Rs. 2,60,000. **Bihar and Orissa.**—The Botanical Section at Sabour has been strengthened by the appointment of one senior scientific assistant and two overseers for general research on crops. The scheme for rice research has been approved by the Imperial Council of Agricultural Research but no funds have yet been allotted. A non-recurring grant of Rs. 75,000 and a recurring grant of Rs. 17,000 per annum for a period of five years have been sanctioned by the Imperial Council, for sugarcane research in this province. Preliminary work has started in order to acquire a suitable site for the experimental station. Work on the improvement of the important economic crops of the province has continued and has been expanded. Rice, sugarcane, wheat, maize, barley, gram, *arhar*, *mung*, *kulai*, peas, mustard and linseed are receiving special attention and encouraging results have been obtained. The work already in progress for the introduction of improved varieties of crops continued. Improved varieties of rice, sugarcane, wheat and gram have been introduced successfully and the area under these improved crops is gradually increasing. The introductions from the Botanical Section of Pusa are being generally tried in all stations of the province. *Berseem* as a fodder crop is being grown on an extensive scale at the Kanke farm (Ranchi) and experiments are being made to investigate suitable conditions for seed production. The results of preliminary trials in Chota Nagpur are very encouraging. Useful work is being done by a number of central banks and co-operative societies in the distribution of improved seeds and in the case of sugarcane the management of some of the sugar factories in North Bihar are playing an important part in the distribution of cane-seed by giving out suitable setts to the growers who supply the mill with cane. Under a system of registered seed-growers, which has been effected with a permanent advance of Rs. 1,00,000, there are now 31 registered seed-growers to multiply pure seed of improved and recommended crops for general distribution. This scheme has, however, been badly affected by the general and unprecedented drop in the price of all agricultural products. Though no seed stores have yet been built by Government, storage accommodation has been arranged at Sepaya and Muzaffarpur, with smaller depots at eight other centres. Arrangements are being made to utilise grain *golas* (depots) administered by the Co-operative Department for the dissemination of improved and recommended seeds.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*contd.*	
	Assam.—The conclusions of the Commission are generally accepted and will be followed. It has been decided to apoint a whole-time Director of Agriculture from 1st April 1931, and it is hoped that the distribution of seeds will be improved. A serious want is that of seed farms, but the provision of these demands funds. It is also hoped that the establishment, with the aid of the Imperial Council of Agricultural Research, of a deep-water rice farm will enable selective experiments to be made on *amon* and *boro* paddy. As a result of the floods in 1929, the introduction of cold weather crops received considerable impetus and Rs. 67,801 worth of seeds were distributed, it is believed, with considerable advantage. An improvement in the amount of seeds distributed through co-operative societies also occurred in 1929-30. It has not yet been found possible to rely on private agency for seed distribution but lately some enterprise has been shown by private merchants in the sale of bonemeal and other manures for potato crops in the Khasi Hills.
	North-West Frontier Province.—Work in connection with the testing of improved varieties and other agricultural experiments in the improvement of crops, including fruits, production of pure seed and approved varieties, and demonstration of improved methods of production, etc., is conducted at the two agricultural stations at Tarnab and Haripur. The existing staff is, however, inadequate for the needs of the province and proposals are under consideration for augmenting it on the lines recommended by the Royal Commission.
	Baluchistan.—Fruit plants have been introduced from outside. Cotton seeds have been obtained from the Punjab, Sind, Bombay and Madras Presidencies for experimental purposes.
	Delhi.—Improved varieties of wheat and cotton seed, and of sugarcane setts, were supplied to the cultivators. Seeds of elephant grass, Sudan grass, lucerne and *berseem* were also introduced and demonstrations and trials with fodder crops were made at a number of places.
	Coorg.—Three improved strains of paddy, obtained from the Paddy Specialist to the Government of Madras, were introduced for trial in Coorg and the results are being watched.
6. Research and Experiment on Rotations and Methods of Tillage (paragraph 104).	**Madras.**—The action taken on this recommendation has already been mentioned in the previous report.
	Bombay.—The Agricultural Department in the Presidency is taking suitable action wherever found necessary with the existing facilities. This problem is receiving particular attention in the case of sugarcane. In Sind, the previous work of the Agricultural Department in this connection has been overhauled and expanded. Special attention is being devoted to research on rotations and methods of tillage suited to post-Barrage conditions in Sind. This work is being done at the Agricultural Research Station, Sakrand. Leaflets in Sindhi, based on the results of this experimental work, will be prepared and issued before the advent of the Barrage Canals water.
	United Provinces.—Experiments continue and definite results, when obtained, have been brought to the notice of cultivators. A few co-operative societies have taken up methods of tillage and rotation of crops, being advised and guided by local officers of the Agricultural Department.
	Punjab.—The action taken on this recommendaton has already been mentioned in the previous report.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*contd.*	**Bihar and Orissa.**—Rotations for the more important tracts in South Bihar have been worked out and are being followed on the departmental farms. Work on experimental utilization of low-lying one-cropped paddy lands for growing *berseem* in the cold weather and maize in the hot weather with the help of irrigation has been started and is going on. Catch-cropping with leguminous fodder crops after maize and *juar* cut for silage is being established as a regular practice on the Kanke (Ranchi) farm. **Assam.**—The staple crop is paddy, which does not lend itself to rotation or to much variation in planting and tillage. It is hoped that the experiments which have been made from time to time on the rotations of jute, sugarcane and potato will in future be more systematic. The suitability of leguminous and other fodder crops for local purposes is now being investigated, and much more is being done in the growth of fodder crops on the few farms under the advice of the Livestock Expert. **Delhi.**—Fifteen cultural experiments were made on demonstration plots on zamindars' land at different places. These were conducted entirely by the zamindars with their own hands under the close supervision and instruction of the Agricultural Assistant.
7. Mass production of Wooden Parts of Agricultural Implements (paragraph 105).	**Madras.**—The action taken on this recommendation has already been mentioned in the previous report. **Bombay.**—The demand for wooden parts of particular implements has not yet been found to be so great in the Presidency as to enable the Agricultural Department to prepare parts on a mass production scale, the local carpenter at present fulfilling requirements. No special action has yet been taken in Sind. Several local firms have undertaken of their own accord the preparation and sale of improved implements, *e.g.*, Egyptian plough, Archimedian screw, for which a demand has been created by the propaganda work of the Agricultural Department. **United Provinces.**—Nothing has yet been done in this direction. The question is under consideration, but the problem is a difficult one. **Assam.**—The Agricultural Department has no engineering branch, and the time has not yet come for a considerable demand for improved implements. The first requirement is the development of a type of cattle which will be capable of operating better ploughs than the traditional models. The Director of Industries hopes to employ the boys in the technical schools in learning to turn out parts.
8. Organisation of the Agricultural Engineering sections of the Agricultural Departments (paragraph 106).	**Madras.**—The action taken on this recommendation has already been mentioned in the previous report. **Bombay.**—A well thought-out scheme dividing Agricultural Engineering into two principal branches—(1) Implement and Machinery Section (including pumping) and (2) Boring Section, was prepared by the Agricultural Department in 1929, but the Local Government were unable to give effect to the proposals for the re-organization in view of the existing financial stringency.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*contd.*	Proposals for the appointment of an Agricultural Engineer and the establishment of an Agricultural Engineering Section in Sind are under the consideration of Government. **United Provinces.**—The reorganization of the Agricultural Engineering section has been completed and an officer of the Public Works Department, Irrigation Branch, has been placed in charge of the section. The subdivision of the section has not been effected. **Assam.**—There is no engineering branch at present, and there are much more urgent needs. The advantages which might be derived from the use of water lifts in rendering riverside lands to be irrigated in the dry season, and the *boro* paddy to be grown with better security, will be examined when the organization of the department is strengthened and funds are available.
9. Research work on Agricultural Implements and Machinery (paragraphs 107-108).	**Madras.**—The Research Engineer is carrying out tests on various types of ploughs that are now in the market. The sale of ploughs in this Presidency is now in the hands of private firms and agents of manufacturers, and the cost is rather high. Iron ploughs will become popular only if the cost is within the means of an ordinary ryot. The cost can be reduced only when ploughs are purchased from manufacturers in larger numbers. In future, the department proposes to buy ploughs and stock them in their depots for sale to ryots. Steps have already been taken in this direction. Tenders were called for from different firms manufacturing ploughs and after careful test the department has fixed two types—a light type priced at Rs. 5 each and a medium type priced at Rs. 12 each. Arrangements are being made to sell them through co-operative societies and other local bodies. A suitable design has been fixed for a *mhote* (an indigenous water lift) wheel and samples have been called for from manufacturers. **Bombay.**—The Agricultural Engineer to Government has devised the following implements and Government have granted permission to take out patents for them :— 1. Modified orient plough. 2. Improved ploughshare. 3. Improved seed drill. In addition to these a winnower on improved lines has been designed. Careful trials of the winnower and seed drill are being conducted. The Agricultural Engineer is designing a combination of a thresher and winnower. Owing to the absence of an Agricultural Engineer and an Agricultural Engineering Section in Sind, no special research work on agricultural implements and machinery can be undertaken. In the past, this work was part of the duties of the Agricultural Engineer, Bombay Presidency. The Chief Agricultural Officer has arranged for tests on mechanical cultivation to be undertaken in co-operation with a commercial firm in order to obtain reliable data on the economics of tractor ploughing, etc., in the Barrage areas. These tests are in progress. **United Provinces.**—The possibility of further improvement in the supply of water from tube-wells worked by electric power is being explored in co-operation with the Irrigation Department.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*contd.*	
	Experiments, financed by a grant from the Board of Industries, were carried out with small cane-crushers and several types of power crushers were obtained and tested. The experiments were still in progress when the cane season closed.
	Punjab.—The action taken on this recommendation has already been mentioned in the previous report. No separate engineer for implements has yet been appointed. An application for a grant-in-aid has been made to the Imperial Council of Agricultural Research towards the appointment of an Engineer to devise a thresher and winnower.
	Bihar and Orissa.—With a grant of Rs. 8,000 from the Imperial Council of Agricultural Research, preliminary arrangements are being made for improvement in the design of small power cane-crushing mills.
	Three implements, designed by one of the Deputy Directors of Agriculture, suitable for general distribution in North Bihar have been standardized, and cheap supplies have been made available. These "Bihar" implements are becoming very popular.
	Central Provinces.—The previous experience gained in the working of a steam tacklé has been written up conjointly by an agricultural officer and the Agricultural Engineer.
	Assam.—Inversion ploughs are preferred on the Government farms. The improvement of implements for the staple paddy crop is not urgent, and it is more important to develop more useful breeds of cattle than the deteriorated animals at present available. Tractor culture has not yet shown encouraging results. The only improved implement for which considerable demand has arisen is the three-roller sugarcane mill.
10. Attention to problems of Cultivation in Dry and Precarious Tracts (paragraph 112).	**Madras.**—The proposals to open a station at Anantapur to study dry tracts with red soil and the millet station at Adoni, referred to in the previous report, have been deferred for the present owing to financial stringency.
	Bombay.—In the Presidency proper, the Agricultural Department is carrying on research work in connection with Dry-Farming at the small station at Manjri near Poona. The methods advocated there by the Soil Physicist to Government as well as the grading of seed are being demonstrated by laying out demonstration plots in the precarious tracts of the Deccan Districts with the help of the school teachers of the District Local Boards, Taluka Development Associations, Co-operative Credit Societies and the public. The Agricultural Department has also prepared a Dry-Farming Research Scheme for the Bombay Deccan. This was approved by the provincial Agricultural Research Committee and was sent to the Imperial Council of Agricultural Research for a grant-in-aid.
	These problems do not arise in Sind.
	United Provinces.—The work on farms situated in Bundelkhand and in the hills continues.
	Punjab.—The action taken on this recommendation has already been mentioned in the previous report. More attention to these problems has been paid since then.
	Bihar and Orissa.—The construction of high-level contour *bandhs* (dams) in the dry uplands of Chota Nagpur and South-East Bihar areas is being continued and extended. In the flooded tracts of Orissa, work is in progress on the Kujang farm with special reference to the finding out of suitable *rabi* crops for introduction in the flooded areas. Another temporary demonstration farm has been started in the flooded tracts of Cuttack

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*contd.*	with a view to explore the possibilities of growing suitable crops in the areas where nothing is now grown except summer paddy to a very limited extent. Small demonstration plots have also been started in three important centres in the districts of Balasore, Puri and Cuttack to demonstrate the possibility of growing suitable *rabi* crops in the rich alluvial areas of these districts liable to floods. **Assam.**—These recommendations do not really concern this province. The precarious areas of importance are those on which *amon* and *boro* paddy are grown. As already mentioned—*vide* item 5—it is hoped to establish a deep-water rice experimental farm and to investigate the possibility of irrigating *boro* lands for tillage when funds are available.
11. Legislation to deal with Pests and Diseases (paragraphs 113 and 114).	**Madras.**—The existing legislation against hairy caterpillar, *nephantis* water hyacinth and pests attacking cambodia cotton, was in force. The legislation against palmyra disease was withdrawn as it was considered that the ryots were sufficiently educated in the methods of prevention. **Bombay.**—No action has so far been taken in this direction and the local Government consider that none is necessary at this stage. **United Provinces.**—Experiments to control the spread of the pink bollworm in cotton by exposing the seed to sun heat have given such satisfactory results that legislation may be considered to be desirable in order to control the pest by this method and avert the great damage done every year to the cotton crop. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. Persuasive methods rather than legislative are being tried. **Burma.**—The draft Burma Agricultural Pests Bill, referred to in the previous report, is now under consideration. **Assam.**—The local Government consider that it is not practicable to legislate on the subject at present.
12. Protection against Wild Animals and Vermin (paragraph 116).	**Madras.**—The Royal Commission recommended that the practice in regard to the grant of permits to shoot destructive animals in reserved forests should be reviewed and that licences should be granted on a more liberal scale to provide for the most effective method of dealing with damage done to crops and wild animals. The Local Government consider that the matter is best left to the discretion of District Magistrates. **Bombay.**—In the Presidency, the Agricultural Department has at present a Pig Killing Officer and a Shikari, who carry out pig killing operations with the help of the cultivators, and Taluka Development Associations, in special groups of villages, wherein the department bears ½ to ⅔ of the total cost. The Revenue Department renders the necessary help in collecting subscriptions from the cultivators at the time of the collection of revenue. The demand for this kind of assistance is so great that it is now found difficult to cope with the work in all parts of the Presidency. This work is also being carried out by gun clubs, which are organized specially for this department. Special facilities are also given for the destruction of wild elephants in the Kanara District by offering rewards and by engaging special staff under the control of the Revenue Department.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*contd.*	
	Fencing and stone-wall erection societies have been developed mostly in the Southern Division, *e.g.*, in the Malad tract, Gokak Canal tract, Mundargi Peta ; but difficulty has been experienced owing to the apathy of the absentee landlords. Individual cultivators are now purchasing fencing material on their own account and it has been found that, during the past two years, about 31 cultivators of six villages fenced an area of about 1,049 acres with 17 miles of wire fencing.
	Grass-hopper campaigns by dragging tin sheets smeared with tar over the young crops are also carried out where found necessary and the people have taken to this method.
	In Sind, propaganda work in the direction of the use of " Cyanogas " pumps against the rat pest is being pushed in certain rice areas where these vermin cause much loss and damage to the crops. No other development of work in this connection appears to be necessary.
	Bengal.—The whole position has been reviewed by the local Government in connection with the proposal for the adoption of measures for the preservation of fauna in the Presidency and it has been decided that no action is necessary.
	Some local organisations have been tried in pig-infected districts but they did not persist after official support was withdrawn.
	United Provinces.—During the last year, more stress was laid by the Legislative Council on the necessity for the preservation of game than on the need for protection against wild animals, and attempts are being made by non-officials to form a Game Preservation Society in these provinces. In the hill forests it is only in the small areas in Jaunsar that game is really effectively protected. In very few forests in the larger areas in Kumaun does game receive protection. In the hill forests, damage by game may be neglected as a serious factor.
	The submontane forests are generally in fairly large continuous tracts and protection of game is effective and clashes with agricultural interests only on the borders of these tracts. Game, admittedly, causes some damage in these areas, but the forests are suitable for the preservation of our local fauna and adjoining cultivation is generally not of a high standard, the poor climatic conditions having a much greater adverse effect on crops than game. Where conditions improve and pressure on the land increases, *e.g.*, as in Gorakhpur, game rapidly decreases in number and conditions rapidly adjust themselves without any special measures.
	The Bundelkhand forests are small in extent ; the head of game in them is small and cannot have much effect on cultivation.
	Protection of game is not the policy in the Afforestation division areas, and the destruction of animals such as nilgai, pig and porcupine was continued by the issue of free passes and the supply to certain subordinates of the Forest Department of guns and cartridges.
	The Forest Department played its part in the campaign against locusts and large areas of forest were burnt to destroy swarms of hoppers located there.
	Assam.—Gun licences for the protection of crops are freely given where required. The number of free licences in force in 1926 and 1929 were 15,318 and 16,886, respectively.
	The whole question of the management of forest reserves was reviewed in 1929-30 by a special committee, and their recommendations have been largely given effect to by the Government.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IV.—Agricultural Improvement—*concld.*	**Delhi.**—During the year under report great efforts were made with satisfactory success to remove the superstitions of the people about protection of deer, locusts, etc. Most of them now are willingly killing the locust and are permitting sportsmen, etc., to shoot the deer, etc., on their lands. **Coorg.**—Firearms are being freely used by Coorg and Jama ryots for the protection of crops against damage by wild animals, and in places not inhabited by these two classes of people, a liberal policy of granting licences for firearms has always been adopted. Organised drives of wild animals during the crop season are also being organised and conducted. The agricultural demonstrator visits places reported to be attacked by vermin and gives necessary instructions to check them.
CHAPTER V.—The Sub-division and Fragmentation of Holdings. 13. Action to deal with the problems presented by the Sub-division and Fragmentation of Holdings (paragraphs 124—127).	**Madras.**—The local Agricultural Advisory Committee recommended that the question should be re-examined. The Board of Revenue has been requested to do so and submit its report by the end of May, 1931. **Bombay.**—The question of legislation to prevent the excessive sub-division of agricultural land and to promote the consolidation of such land was taken up by the local Government, but has been dropped for the present. **United Provinces.**—Since the submission of the last report, holdings have been consolidated in three villages by co-operative societies specially formed for this purpose. The work has been taken up by the Co-operative Department chiefly in the Saharanpur and Bijnor districts. Lack of funds and of trained staff prevents the expansion of the work. There is a demand from the Moradabad district for the work to be started there. Efforts to consolidate holdings on Court of Wards estates met with very little success, owing to the apathy of tenants. But it is encouraging to know that even a little progress has been made in this direction. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. **Burma.**—There are two separate matters, *viz.*, (1) that the total area cultivated by the individual is too small; and (2) that this total area is not continuous: (1) is not one with which legislation or any other such measure, *e.g.*, persuasion can deal. It is a result of the prevailing standard of living and must depend for its solution on economic advance. (2) is an ordinary case in Burma. The cases in which there is fragmentation of uniform land are rare and not important. The Burmese system of inheritance favours fragmentation; but against it there is a tendency in Burma, which is becoming more pronounced, to value land purely as a source of income. The agriculturist is not wedded to the soil; and as a type is ready to shift from one holding to another or to abandon agriculture altogether as his economic interests dictate. The tendency to increase the size of holdings to economic limits is very evident in Lower Burma. The local Government do not think that this needs to be assisted by legislation or other artificial means and would leave the matter to work itself out in Burma in the course of economic development. **Bihar and Orissa.**—Local investigations were undertaken during the year in the Bettiah Wards and the Khurda Government Estates to ascertain the practical possibility of consolidation of holdings on a voluntary basis. In both the areas, the investigations have demonstrated that there is no

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER V.—The Sub-division and Fragmentation of Holdings—*contd.*	practical possibility of making any progress in this direction on a voluntary basis. For the reasons explained in the previous progress report, the local Government do not consider that it is feasible to introduce legislation to deal with this matter in Bihar and Orissa and they have now come to the conclusion after investigation in the largest ward's estate and in the most favourably situated Government estate that the proposal is generally impracticable and should be dropped. **Central Provinces.**—During the year, 51,983 acres of occupied area in the Chattisgarh Division have been consolidated under the Central Provinces Consolidation of Holdings Act, 1928, at a cost of Rs. 20,272, or Rs. 0-6-3 per acre. The number of fields in this area has been reduced from 89,632 to 19,448. **Assam.**—The local Government, on examination of the position, have come to the conclusion that fragmentation of holdings has not proceeded yet to such lengths in the Assam Valley as to call for action. Such fragmentation is admittedly of a serious degree in parts of the Surma Valley, but the absence of a proper record of rights in the permanently settled areas renders the formation of any simple administrative measure impracticable. Where consolidation measures appear desirable and feasible, as in the temporarily-settled areas of the Surma Valley, particularly the Jaintia *parganas*, it is considered that co-operative methods offer the best hope of success, and the possibility of encouraging action on co-operative lines is not being lost sight of, but for the present the co-operative movement in such areas is not of sufficient strength. A suggestion that the principles of civil court partition should be applied to partition proceedings under the Land Revenue Regulation, to prevent further fragmentation by enabling sale-proceeds to be distributed, rather than the land and fixtures themselves, was considered but was discarded as likely to be ineffective. **North-West Frontier Province.**—During the year, propaganda for the consolidation of holdings was begun by the Co-operative Department in Swabi tahsil of the Peshawar District and gives promise of good results. **Baluchistan.**—This question is not acute in Baluchistan and no action seems necessary. **Delhi.**—To cope with the evil effects of sub-division and fragmentation, the co-operative scheme of consolidation, originated in the Punjab, has been taken up. Two Government paid sub-inspectors have been employed for this purpose and, in view of the public demand, the question of adding two more posts is under consideration. Consolidation in two villages has been finished and operations are in progress in two more. The total area consolidated in the former is nearly 700 acres where 1,700 fragmented fields have been consolidated into 450 blocks. This scheme is much appreciated by the cultivators and applications are being received for consolidation from several villages. Progress through the co-operative method is slow but it has the entire agreement of all the right-holders and consequently any such scheme would in the long run produce healthy effects on the public. The mutation fee for consolidation on co-operative lines has been remitted by Government. **Coorg.**—The tenure of a fairly large area of holding is such as not to admit of sub-division or fragmentation except as a maintenance division among several individual members in the family. It is extremely doubtful if the efforts made in the direction of consolidating holdings would meet with success.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VI.—Demonstration and Propaganda. 14. Review of Methods of Propaganda employed (paragraph 130).	**Madras.**—The whole question of the various items of propaganda was gone through at a conference of gazetted officers of the Agricultural Department in January 1930, and the several items were divided into :— (1) general, which every demonstrator should endeavour to push on with in all seasons, and (2) specific to particular tracts. Propaganda is now being developed in these two directions. **Bombay.**—The subject is dealt with in the Annual Reports of the Department of Agriculture. The recommendation of the Royal Commission of not employing a recruit on work which brings him into direct contact with the cultivator until his capacity for such work has been gauged by considerable practical experience is kept in view in arranging propaganda. The methods of propaganda employed in Sind were reviewed by the Chief Agricultural Officer who has submitted a report to Government in this connection. **Bengal.**—The local Government accept the recommendations and have brought them to the notice of the Director of Agriculture. **United Provinces.**—The Agricultural Department makes the most of the limited resources at its disposal for demonstration and propaganda purposes. Demonstration farms, private farms worked with the advice of the department, selected cultivators' fields where all operations are conducted by the officials of the department, agricultural associations, co-operative societies, agricultural exhibitions and religious fairs are all utilized for demonstration and propaganda work. Methods which by actual experience have proved successful in particular localities, are also adopted. Demonstrations with improved crops, green manuring and improved implements have been given during the year on an area of 362,950 acres. **Punjab.**—The main lines of work have been extended and intensified. Methods of propaganda are reviewed from time to time in the light of results. **Assam.**—Demonstration on the cultivators' own fields is the method consistently adopted in this province. Effort will be concentrated on the means to make this method more efficient, though other methods such as lantern lectures, and *bazaar* trains will not be neglected. **North-West Frontier Province.**—The aim of the local Administration is to establish a self-supporting demonstration or instructional farm in each district, supported by selected landholders who undertake to produce pure seed. It is considered that in tillage and in cultivating the staple crops the small holder gains little from village demonstration though instruction in certain branches of fruit growing is best given in the grower's orchard. When invited to see the work of a new implement or machine, the cultivator freely attends a demonstration farm but few can be expected to travel outside their own districts. **Delhi.**—Propaganda regarding improved methods of cultivation was carried on as follows :— 1. Improved implements and seeds were shown to visitors at headquarters. 2. They were taken to different villages and demonstrated there. 3. They were demonstrated at the time of important gatherings and fairs. 4. The superiority of the improved seeds and implements was shown to zamindars by making demonstrations of varietal and cultural plots on zamindars' lands. 5. Some of the improved implements were given to zamindars on loan. 6. Leaflets on important subjects were distributed.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VI.—Demonstration and Propaganda—*contd.*	Propaganda was carried on among the zamindars, with regard to the following :— Advantages and use of improved and labour-saving implements and selected seeds. Preserving of farm yard manure in pits. Use of fertilizers. Consolidation of holdings. Rearing of good breed cattle. Growing of surplus fodder in good years and storing it for use in bad years. Economical use of fodder by chaffing. Systematical laying-out of gardens. Planting of top-worked or grafted *ber* plants (*Zizyphus Jujuba*) Practising irrigation in small *kiaris* or compartments. Sowing of perennial grasses like lucerne, *berseem* and elephant grass, etc. Growing trees on waste lands and the sides of roads, etc., to increase timber and to supply fuel to save cow-dung cakes. **Coorg.**—The agricultural demonstrator was occupied in popularising the use of improved iron ploughs, supervising trials of new varieties of paddy and use of artificial manures. An attempt has also been made to grow Cambodia cotton. Details of the methods of propaganda employed are dealt with comprehensively in the Administration report of the province.
15. Re-examination of the policy of establishing Demonstration Farms in the Punjab and the United Provinces (paragraph 131).	**United Provinces.**—*Vide* remarks against item 16 below. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report.
16. Establishment of Special Demonstration Farms (paragraph 131).	**Madras.**—In accordance with the views of this Government expressed in the last report, each *taluk* is divided into four or five centres and as far as possible in each centre demonstration plots are laid down to demonstrate improved methods. The cultivation is carried on by the ryot in each centre under the guidance of the departmental officer. **Bombay.**—The local Government have accorded sanction to a scheme for the establishment of six new "Auxiliary" Government Farms in the Barrage areas of Sind. The main object of these farms is to carry out in practice, under zamindari conditions, the improvements in the methods and materials of agriculture under post-Barrage conditions which result from the research work now in progress at departmental research stations. In addition, these farms will be utilised for the production of pure seed of improved varieties of crops, for training of *haris* (peasants) and for economic investigations into the cost of production of various crops under perennial irrigation. Three of these farms are at present under construction and layout. **United Provinces.**—The local Government do not propose to close the existing farms, which are in sound condition financially. These farms serve as centres of demonstration and propaganda, from which are distributed improved seeds and implements and from which improved methods of cultivation are disseminated. Some of the demonstration farms are being developed as seed and experimental farms. **Bihar and Orissa.**—Paucity of funds has stopped further progress in this direction. An agricultural farm has however been opened at the cost of the Bettiah Ward's Estate in the Champaran district under the supervision of the Agricultural Department.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VI.—Demonstration and Propaganda— *contd.*	**Assam.**—There are at present no such farms and the prospects of creating a number of seed farms are still dubious for financial reasons.
	Coorg.—An attempt has been made to demonstrate to the ryots on their own lands side by side with their crop the superiority of certain strains of paddy and the effect of using some fertilisers. The question of giving effect to the recommendation for the establishment of a demonstration farm is under consideration but the proposal to open agricultural demonstration plots on the cultivators' fields in various centres in Coorg is kept in abeyance owing to the present financial distress.
17. Establishment of Short Courses on Demonstration and Seed Farms (paragraph 135).	**Madras.**—The question is under consideration.
	Bombay.—In the Presidency, at present, the necessary facilities exist on the Government Farm, Jalgaon, and the Agricultural College Dairy, Kirkee, for training agricultural graduates in practical work. Short course students are also taken at other Farms, *e.g.*, Surat Farm, where there is sufficient staff. In addition to this short classes are held, *e.g.*, Sugarcane classes at the Manjri Farm or in a sugarcane growing tract, *e.g.*, Baramati, Rahata, and *Bunding* and Land Development Classes in which cultivators have been found to take very great interest. No fees are being charged at these classes. Horticultural classes have been held at suitable centres. In Sind, the recommendation will receive consideration upon the establishment of the new "Auxiliary" Farms mentioned in the remarks against item 16.
	United Provinces.—The Bichpuri and Nagina farms in the Agra and Bijnor districts and the Shahjahanpur and Partabgarh farms provide facilities for the practical training of those who are directly interested in the improvement of agriculture. The system will be extended as funds become available. A few inspectors of the Co-operative department were given a short course in agriculture at Cawnpore. Supervisors of that department are trained in agriculture at Partabgarh for five months each year and teachers for adult schools are given a four months' course in agriculture at Benares every year.
	Punjab.—Arrangements have been made to hold such courses in places where a demand for them exists.
	Burma.—Short courses of instruction in agriculture are given to adult cultivators on a small stipend at the existing farm schools at Hmawbi and Mahlaing. The local Government have approved a scheme to introduce farm schools, one at each of the central farms, and will give effect to it as funds permit.
	Bihar and Orissa.—In the absence of an agricultural college for Bihar and Orissa, the probationary overseers of the Agricultural department continue to be trained on the departmental farms.
	Central Provinces.—A combined course of instruction for Irrigation and Agricultural Officers has been held.
	Assam.—*Vide* remarks against item 16.
	North-West Frontier Province.—Short courses do not exist, but those desiring instruction come to the district farm and engage as daily-paid labourers, for a week, a month or a year.
	Delhi.—These cannot be held for want of a demonstration farm.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VI.—Demonstration and Propaganda—*contd.*	
18. Comparison of the two systems of carrying out Demonstrations on the Cultivator's own Field (paragraph 136).	**Madras.**—The action taken has already been reported in the previous report. **Bombay.**—Both the systems are in operation in the Presidency and in Sind. A continuation of both methods with an increase in the number of demonstrations on cultivators' own fields will be necessary under post-Barrage conditions. The extension of this latter system is solely dependent upon the funds made available. **United Provinces.**—Both systems are in vogue in the United Provinces and give satisfactory results. **Bihar and Orissa.**—Demonstrations on cultivators' plots under the supervision of the Agricultural department, having proved successful, are being extended. **Central Provinces.**—Facilities for opening demonstration plots on the farms of private persons are now being more freely offered. **Assam.**—The point will be considered by the local Government if it proves possible to strengthen the demonstration staff. **North-West Frontier Province.**—Experience shows that demonstrations in the cultivators' own fields are viewed with indifference but that the small holder can appraise the value of the results gained on the district farms. The existing staff is, however, not sufficient to devote serious attention to work outside the Government farms. **Delhi.**—44 demonstrations of different kinds were made on zamindars' land to compare the improved system of cultivation with the old one.
19. Peripatetic Demonstrations of the use of Improved Implements (paragraph 138).	**Madras.**—The action taken has already been mentioned in the previous report. **Bombay.**—The Agricultural department has a large number of implement depots scattered all over the Presidency from which the improved implements are given on hire and the working of the implements is demonstrated at Shows and Fairs by the Taluka Development Associations and also at the *Jamabandhi* demonstrations specially arranged in co-ordination with the officers of the Revenue department. This is the usual system of demonstration. No travelling lorries, etc., have so far been purchased nor demonstration trains organized, as these are expensive. Peripatetic demonstrations of the use of improved implements are being carried out by all the district staff in Sind. Full advantage is taken of the assistance of the Revenue department in this work. Its extension is being considered by the Chief Agricultural Officer as part of the development of propaganda work in the Province under post-Barrage conditions. **Bengal.**—The local Government accept the recommendations which are being carried out. At present demonstrations are confined to fairs and exhibitions that take place annually in various parts of the province. **United Provinces.**—The organization of travelling exhibitions in definite areas is under contemplation and will be tried as soon as funds are available. The Co-operative department carried on progaganda advocating the use of improved implements by distributing leaflets on the subject, delivering lectures as well as by actual demonstration in the fields of cultivators. Over one thousand Meston ploughs are now being used by members of co-operative societies as a result of this propaganda and more than two thousand three-roller cane crushers have replaced the old two-roller type. A cane crusher has been purchased for the Niwari co-operative societies in the Partabgarh district from the grant sanctioned for the purpose by the local Board of Agriculture as an experimental measure.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VI.—Demonstration and Propaganda—*contd.*	**Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. **Bihar and Orissa.**—The demonstrations have been continued in all parts of North Bihar and have been attended with great success and have helped to establish a growing demand for improved implements and also for improved and recommended seeds. *In the North Bihar Range.*—There were 2,081 demonstrations, 1,872 in the Tirhut Division and 209 in the Purnea circle. The area under demonstration plots was 1,225 acres. These demonstrations concerned sugarcane and wheat cultivation largely and general methods of better farming. *In the South Bihar Range.*—There were 785 demonstrations chiefly concerning *dahia* paddy, artificial manures, wheat and sugarcane. *In the South-East Bihar Range.*—There were 320 demonstrations carried out chiefly on Coimbatore sugarcanes, *dahia* paddy and artificial manures. *In the Chota Nagpur Range.*—There were 1,749 demonstrations chiefly on Coimbatore canes, *dahia* paddy and groundnut. *In the Orissa Range.*—The total number of demonstrations conducted was 1,125. These concerned Coimbatore canes, use of ammonium sulphate and ammophos, implements and paddy. Recent retrenchments involving the cutting down of the number of outfits consisting of a pair of bullocks and a complete set of Bihar implements under a trained *kamdar* for demonstration have hindered work in this line considerably. In Orissa, demonstrations with 3-rollered bullock-driven sugarcane mills and shallow pans for *gur*-making are being vigorously pushed through and as a result orders have been received for about 50 mills and pans. **Assam.**—The local Government consider that little more can or need be done than is done at present. Most of the demonstrators are given a set of the implements which it is considered can be advantageously introduced. *Bazaar* trains are occasionally utilized. **Delhi.**—108 demonstrations of improved implements were given at different villages, fairs and other gatherings during the year and inspite of an unfavourable year, the zamindars purchased a number of improved implements.
20. Agricultural Shows and Agricultural Stalls (paragraph 139).	**Madras.**—The action taken has already been mentioned in the pervious report. **Bombay.**—In the Presidency proper, the holding of small agricultural shows and demonstrations and the grant of rewards, medals, certificates as may be found necessary are being carried on as usual. No action, however, regarding the opening of the stall at the market has been taken. Small agricultural shows are held in Sind from time to time at suitable centres as part of the propaganda work of the department. As there are no regulated markets in the districts the question of the establishment of permanent agricultural stalls does not arise. **Bengal.**—The principle has been accepted by the local Government. Small grants to agricultural exhibitions are given by Government and the Agricultural department arranges suitable demonstrations in certain cases. No regulated market exists at present in Bengal. **United Provinces.**—The action taken on this recommendation has already been mentioned in the previous report. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. The opening of stalls at other places has been held over owing to financial stringency.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VI.—Demonstration and Propaganda—*contd.*	**Bihar and Orissa.**—Suitable demonstrations of improved and recommended crops, implements, manures and agricultural practices continued to be arranged successfully at the several agricultural shows and fairs of this province and grants were given as usual. In North Bihar, an experiment is being tried of cultivating semi-permanent plots with improved crops in the show-grounds in addition to stalls for advertisement and sale of improved seeds, implements and manures. The success in this direction at the Sonepur Fair (*Chhattar Mela*) last year was very encouraging. **Assam.**—The local Agricultural department aids and takes part in agricultural shows. No cinematograph can at present be afforded either for agriculture or rural welfare in general. **Delhi.**—On account of failure of crops and unfavourable seasons, no agricultural show or ploughing competition was held during the year under report.
21. Other Forms of Propaganda (paragraph 141).	**Madras.**—The Veterinary department has also been using the Agricultural department exhibition vans for demonstration and propaganda. The question of purchasing one exclusively for the Veterinary Department is under consideration. **Bombay.**—In the Presidency proper, the question of the preparation of cinema films with the help of the Publicity Officer of the Railway Board, Delhi, has been under consideration. Full advantage of the cinema car which is occasionally run by the G. I. P. Railway is taken. A proposal to run a demonstration train jointly by several Departments—Public Health, Agricultural, Co-operative, etc., could not be proceeded with for want of funds. The propaganda staff of the Agricultural department gives lectures, as usual, with the aid of magic lanterns, and this is being done as far as the funds permit. In Sind, the use of the magic lantern for propaganda purposes is being extended. A series of lantern slides to illustrate improved agriculture under the Lloyd Barrage is in course of preparation and it is intended to organise a touring lecturing party to deliver magic lantern lectures in the villages next cold weather. When finance permits, a demonstration motor lorry would be of much use and would greatly assist departmental propaganda. **Bengal.**—The question of production of cinema films is considered to be an expensive business which the Agricultural Department cannot hope to undertake for some time to come. The demonstration train toured over the metre gauge section in North Bengal. **United Provinces.**—Touring officers of the Agricultural Department give lectures which are, where possible, illustrated by lantern slides. Lack of funds again prevented the materialisation of the proposal for a demonstration train and of another proposal for demonstration motor lorries. The Forest Department also carry on propaganda, chiefly, by means of lectures and demonstration plantations. Lectures were delivered at the Universities and Training Colleges of Lucknow and Allahabad, the Agricultural College, Cawnpore, to the Scientific Society of Agra and to colleges at Gorakhpur, Bareilly, Meerut and Agra, in which the importance of creating fodder and fuel reserves, and thus releasing cow dung for manure, was emphasised. Demonstration work on the improvement of ravine areas along the Jumna, Ganges and Gumti ravines in the Etawah, Agra, Meerut, Farrukhabad and Lucknow districts was continued. Some of these areas are as yet in the very early stages and are perhaps more experimental than demonstrational, but they give rise to considerable interest locally. Inquiries for help and advice are steadily received and the necessity of extending the work has been mentioned by members of the Legislative Council.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VI.—Demonstration and Propaganda—*contd.*	In the Kumaun Circle a leaflet on the value of the Kumaun hill forests was prepared and published. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. Ploughing matches are held and members of the staff hold conferences in villages and give lectures while on tour with a view to getting into closer touch with the people to ascertain their needs. **Assam.**—*Vide* remarks against item 20 above.
22. Formation of Divisional Boards and *Taluka* Development Associations (paragraph 145).	**Madras.**—Attempts are being made to form village organizations for the following purposes :— (1) to maintain and distribute a supply of pure seed of a strain of crop, (2) to maintain at a stud a breeding bull suitable for the tract, and (3) to form a centre of instruction for the establishment of improvements in agricultural products. **Bombay.**—The work as regards the formation of Taluka Development Associations has received a check owing to financial stringency. They are doing useful work in agricultural and co-operative propaganda. Many of these associations are handicapped by insufficient funds. The re-organisation of these associations in Sind in order to make them more fitted to carry out their work among the cultivators is under consideration. **United Provinces.**—There are now 24 agricultural associations spread over nine districts. They are doing useful work. The movement is, however, still in its infancy, and the working of these associations is being watched with interest. **Punjab.**—Except in three districts there are now agricultural associations at the headquarters of every district in the province. These associations are now real live institutions and a great help in local agricultural developments. **Bihar and Orissa.**—All the Divisional Development Boards established in this province, though purely of an advisory nature, have been active and are doing useful work. **Assam.**—The problem of co-operating activity will be especially considered in connection with the separation of the Agriculture and the Co-operative and Industries departments. The Banking Enquiry Committee, 1930, noted the shortage of competent non-officials for local organization. **Delhi.**—There are no such boards or associations in this province.
23. Use made of Co-operative Societies in Demonstration Work (paragraph 147).	**Madras.**—There are seventeen societies intended solely for agricultural demonstration work. In 1929-30, six of these societies cultivated side by side select plots of land under the old methods and under the improved methods and demonstrated the superiority of the latter. Six of these societies also supplied purer varieties of seeds and manures and improved implements to the total value of about Rs. 2 lakhs. There are at present separate societies for all kinds of agricultural improvements, *e.g.*, seed societies for propagating improved strains of seed, demonstration societies for showing the advantage of improved methods of cultivation and societies for supplying agricultural requirements. The question of making one society attend to all activities in one or more villages is under consideration.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VI.—Demonstration and Propaganda—*contd.*	**Bombay.**—The agency of the co-operative societies is being availed of as far as possible and the work shows signs of progress. Even Taluka Development Associations carry on their propaganda through the agency of co-operative societies where suitable. The closest association exists between the Agricultural and Co-operative departments in Sind in carrying on propaganda work in the districts. Much of the agricultural propaganda work is done through co-operative agency and this policy will be followed and expanded in future. No better-farming societies exist at present but their formation under post-Barrage conditions of agriculture will receive consideration. **Bengal.**—The principle is accepted by the local Government. Every effort is made to maintain close touch between the Agricultural and Co-operative departments. **United Provinces.**—The Agricultural Department provides fieldmen and machinery to co-operative units recommended for such help by the Registrar of Co-operative Societies. Co-operative group conferences are attended by the staff of the Agricultural Department and are utilized for delivering lectures on agricultural subjects. Improved seed and implements are supplied to co-operative societies, some of which have started small demonstration plots and opened seed stores. The Registrar of Co-operative Societies, says that the only successful form of demonstration of agricultural improvements in a village is to prevail on one or two members of societies to sow crops in half a field as instructed by the Agricultural Department and in the other half in the traditional way, and then see the difference for themselves. Group conferences referred to above were attended by over 30,000 members of co-operative societies and the *panches* (representatives) of over 2,000 societies took part in them. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. The experience has not been encouraging. **Bihar and Orissa.**—The Agricultural department works in close co-operation with the central co-operative banks and through these with the co-operative societies in the province. Much of the propaganda, demonstration, and distribution work of the department is done through these organisations. No " better-farming " societies of the Punjab type have yet been established in this province. But steps have been taken by the Co-operative department to print and distribute by-laws for better-farming societies on the lines of those in force in the Punjab, in English, Oriya and Hindi, and the Assistant Registrars have been instructed to organise such societies in consultation with the officers of the Agricultural Department, where suitable. **Assam.**—Some use is made of the co-operative societies for distribution of seeds. The first problems are, however, the organization of the societies themselves for their main purpose, the provision of cheap credit, and education on the principles of co-operation ; these are engaging the attention of the local Government. **Delhi.**—The Agricultural Department uses rural co-operative societies as a means of propaganda for the improved agricultural system. The officials of the department arrange tours with the co-operative officials, attend and address co-operative meetings and conferences and give demonstrations of improved implements and seeds on such occasions. The villages, where consolidation of lands is done co-operatively, serve as the best centres to concentrate improved system of agriculture. Work has already made a satisfactory start in such villages.
24. Appointment of a Special Officer for the organisation and systematisation of Propaganda Work (paragraph 148).	**Madras.**—The action taken has already been reported in the previous report.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VI.—Demonstration and Propaganda—*concld.*	**Bombay.**—No such officer has yet been appointed. All agricultural propaganda work in Sind is controlled by the Chief Agricultural Officer in Sind. **Bengal.**—The local Government accept the recommendation in principle but consider that without more funds it is difficult to make suggestions. **United Provinces.**—No action has been taken in the Agricultural Department on account of lack of funds and shortage of senior staff, but the Co-operative Department appointed a special inspector for agricultural propaganda work. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. No officer has yet been appointed. **Burma.**—The local Government have decided that in present circumstances no action should be taken on this recommendation, as they consider that the present methods suffice. These consist of (1) actual demonstrations on the cultivators' fields, (2) training of cultivators on the central farms, (3) lectures at pagoda festivals and agricultural shows, and (4) the preparation and distribution of leaflets and posters. The Director of Agriculture has, however, been instructed to submit a proposal for the translation of the Bulletins and Agricultural Surveys. **Assam.**—It is hoped that seed distribution and propaganda may be concentrated in the hands of a Deputy Director now that there are three such officers and the appointment of a whole-time Director of Agriculture has been approved. Meanwhile no definite propaganda scheme has been worked out. **North-West Frontier Province.**—No action has yet been taken. **Delhi.**—The Agricultural Assistant is in charge of agricultural development work under the control and instruction of the Deputy Director of Agriculture, Hansi, Punjab. **Coorg.**—The Agricultural Demonstrator was deputed for a fortnight in the month of September, 1929, to the experimental farms at Coimbatore and Pattambi to study the details of the demonstration and experimental work done in those places. An attempt was made to grow cotton in the drier villages lying in the north-eastern side of the country. The temporary agricultural establishment was confined to instructing ryots in improved methods of cultivation of paddy and operations against pests and diseases of paddy and orange.
CHAPTER VII.—Animal Husbandry.	
25. Work on Sheep and Goat Breeding (paragraphs 158-159).	**Bombay.**—In the Presidency proper, no further progress in connection with the sheep breeding scheme referred to in the last report has been made, but the work has been started on a small scale by the Industrial and Agricultural School at Sangli, and this has been subsidized to a small extent from the Sir Sassoon David Trust Fund. In Sind, no work of this kind has been undertaken. **United Provinces.**—No action could be taken by the Agricultural Department owing to lack of funds, but the Rev. A. E. Slater of the Mission Poultry Farm, Etah, prepared a scheme for the improvement of the breed of goats in the United Provinces, which was examined by experts and considered by the United Provinces Agricultural Research Committee, who recommended it to the Imperial Council of Agricultural Research for a grant. The scheme is still under consideration by the Imperial Council.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VII.—Animal Husbandry—*contd.*	
	Punjab.—The work is progressing steadily. One hundred and ninety cross bred merino rams and 70 ewes were issued from the Government Cattle Farm, Hissar, to selected breeders in the hill district of Kangra at concession rates as against 70 rams last year. Government has, during the year 1929-30, further extended the scope of this concession to genuine breeders of all hill areas in the Province. The flock of Bikaner desert sheep recently established on the Hissar Farm will meet the demand for the issue of suitable rams in the plains districts. The flock of indigenous goats which was started on the Hissar Farm in 1928 is making satisfactory progress. The issue of male and female goats to districts for breeding purposes has recently begun. A survey of the present position with regard to goat breeding in the Province is shortly being started with a view to concentration of efforts by the Department in the areas most suited for goat breeding. **Assam.**—The local Government consider that this work must wait until cattle breeding has been thoroughly established. **Delhi.**—Most of the zamindars are Hindu Jats, Gujars and Ahirs, etc., and they are not morally and religiously interested in sheep and goat rearing, with the result that there is no existing good breed of sheep and goats in this province. These are chiefly reared by *Kamins*. Among the zamindars and high caste people, propaganda is regularly carried out with a statisfactory response from their side. (1) (*a*) *Sheep Breeding.*—The Delhi Province is not a sheep-breeding tract. The zamindars think it below their dignity to keep sheep. In the course of tours, the benefits of keeping these animals are impressed upon the minds of the zamindars and necessary propaganda is carried out by the staff in this direction. As a result of this propaganda, some zamindars have expressed their desire to start keeping these animals and some improvement is anticipated in this direction in 1931. (*b*) *Goat Breeding.*—Goats are chiefly kept by *Gadarias* and *Kamins*. In the Delhi City and big towns poor people also keep one or two goats, for the sake of milk. The goats of this province do not produce long hair. The goat breeders are instructed as to the necessity of keeping goats of special characteristics in order to improve the existing breed, but it is a very difficult task and it will take time before any improvement is seen.
26. Improvement of Grazing Facilities. (Paragraphs 181—183.)	**Madras.**—There is a proposal to control grazing in one of the reserved forests and introduce a rotational system of grazing. The scheme will be carried out by the Agricultural Department in co-operation with the Forest Department. **Bombay.**—In the Presidency proper, the methods carried on by the Agricultural Department in successfully dealing with the poor pasture lands in the Deccan have been brought to the notice of the Forest Department. In Sind, no action has been taken and, in view of the imminent advent of perennial irrigation under the Lloyd Barrage, the position with regard to grazing facilities will require to be reconsidered in the light of the changes in agricultural practice which will shortly take place. The matter will be considered when the report of the Sind Cattle Committee is published. **United Provinces.**—Experiments with new fodder crops continued, some of which promise well. An inquiry has been initiated into the rights and customs in regard to village grazing areas, and the results might suggest some line of improvement. Experimental work on the provision of grazing grounds is in progress in the afforestation division of the Forest Department, and work on *usar* lands has also been undertaken. It is yet too early to forecast the results of these experiments, but so far the indication is that closure during the rains

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VII.—Animal Husbandry—*contd.*	increases the growth of grass materially on *usar* lands and that the grass produced is eaten by cattle. Attempts are also being made to improve the quality of the grass by sowing seeds of better grasses. In the bulk of the reserved forests, little can be done at present on a large scale to improve grazing facilities, but any cases of local difficulties that come to light are carefully investigated and such action as is possible is taken. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. Concerted action by the Forest and Agricultural Departments has been taken for the improvement of the Murree Hill Forests. Similar consultations are about to take place regarding forests in the Kangra district. **Assam.**—Grazing facilities within the province though ample—the total area reserved for both professional graziers and villagers is now 237,303 acres, as compared with 5,522,443 acres settled for ordinary cultivation—leave much to be desired as regards local distribution and utilization. The reserves in the Surma Valley are frequently inadequate but acquisition is expensive. Action is in contemplation on the following lines :— (1) More careful demarcation of grazing areas, (2) reduction of reservations for professional graziers, (3) imposition of conditions for grazing on some of the grounds as regards stocking, admission of bulls, rotation and other matters mentioned by the Commission, (4) extension of grazing facilities for cows and dairy societies. (An area of 300 acres was settled with one such society, but this unfortunately failed owing largely to the fact that it was organized by small capitalists as a commercial venture, and not by milkmen themselves), (5) reservation of areas on similar conditions for villages which cannot obtain grazing and (6) encouragement of the use of fodder crops and silage. A Livestock and Dairy Expert has already been appointed, who is making the local examination necessary. It is also intended to place an officer on special duty in the Surma Valley, when one is available, to investigate the possibility of rendering grazing grounds now under scrub jungle, reeds or other inedible vegetation, fit for the regeneration of natural grasses by action on the lines of self-help by the local villagers. The cost of the deputation of such an officer would be about Rs. 2,000. **North-West Frontier Province.**—Irrigated areas in this province produce abundance of clover from November to June, and ample green fodder throughout the other months. In the dry tracts no action of value to the cultivator appears possible at present. **Delhi.**—There are not sufficient pastures in most of the villages ; where such pastures exist zamindars are advised to make compartments therein to check the water from being drained away from the surface. **Coorg.**—The scheme of eradicating lantana for the reclamation of pasture land overrun by this pest was continued.
27. Promotion of the use of Silage. (Paragraph 185.)	**Madras.**—Intensive propaganda is being carried on by the district officers. Leaflets on the subject are distributed free. Wherever facilities exist, demonstrations are given. **Bombay.**—Suitable action in conformity with the recommendation is in progress in the Presidency proper. In Sind, no action has yet been taken and the use of silage is practically unknown. Under post-Barrage conditions, the matter will become of greater importance and will then receive consideration.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VII.—Animal Husbandry—*contd.*	
	United Provinces.—Lack of funds prevented the initiation of the concentrated effort referred to in the last report in districts where fodder supply is precarious.
	Punjab.—The action taken on this recommendation has already been mentioned in the previous report and the work is being continued.
	Bihar and Orissa.—Experiments on many farms have demonstrated that silage can be made very successfully in *kutcha* pits. Attempts are now being made to get the practice adopted in various villages. For demonstration in chaff-cutting for silage, 3 bullock-driven fodder-cutting outfits have been obtained and are in use.
	Assam.—Silage pits are now used in the farms under the supervision of the Livestock Expert. The varieties of the local fodders suitable for silage are also being investigated.
	Delhi.—Two silo pits were made for demonstration and the zamindars were advised to grow surplus fodder in good years and to preserve the surplus in the form of silage, for use in bad years or in bad parts of the year.
	Coorg.—Experiments in silage as food for cattle are being made.
	The utilization of green grass for silage was demonstrated by opening a pit silo in Mercara and by educating the cultivators on the preparation and value of silage. Further efforts will be made to popularise silage.
28. Investigation of the correct period at which to harvest Cereals. (Paragraph 186.)	**Bombay.**—No action in this line of work has so far been taken in the Presidency proper. No special action appears to be necessary in Sind at present. The recommendation will receive attention when Barrage conditions come into force.
	United Provinces.—No work on this has been reported.
	Assam.—No experiments have yet been made, but it is hoped to make some on the rice farms.
29. Encouragement of the cultivation of Leguminous Fodder Crops. (Paragraph 187.)	**Madras.**—Leaflets explaining that no water-rate will be charged on crops grown for fodder are distributed and propaganda is being carried on to encourage ryots to grow fodder crops.
	Bombay.—In the Presidency proper, necessary action in connection with lucerne is being taken. Experiments are in progress with *berseem* for the Deccan Canal Area. In Sind, propaganda work is being carried out by demonstration and leaflets to induce zamindars to grow leguminous fodder crops on a larger scale. This practice will be more easily extended with the increased water supply available from the Lloyd Barrage from March 1932. Special attention is given to the cultivation of *berseem* (*Trifolium Alexandrium*) on Government farms where intensive cultivation of this crop has a beneficial effect on *kalar* lands.
	United Provinces.—Leguminous crops are grown on a large scale in this province. Efforts to introduce heavy yielding crops, *e.g.*, lucerne, continue.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VII.—Animal Husbandry—*contd.*	
	Punjab.—The action taken on this recommendation has already been mentioned in the previous report. Work is expanding in this direction. Particular success has been obtained by the bacteria linoculation of *berseem*. Investigations on the similar treatment of other legumes are in progress.
	Bihar and Orissa.—Experiments in growing *berseem* with irrigation in the cold weather are being conducted on most farms of the department.
	During the monsoon the extension of *Meth* and Soybean as green fodder crops is receiving special attention.
	Assam.—The use of legumes is encouraged by demonstration and seed distribution. As already stated against item 26, the fodder question is being studied and the Livestock Expert has made proposals which will be tried out in the farms. Some crops such as lucerne, *berseem* and clover do not succeed in the watery conditions of Assam.
	North-West Frontier Province.—Practically every holder of irrigated land in this province grows *shaftal* (*Trifolium respinatum*) or *berseem* (*T. Alexandrium*) and clover enters into each rotation. On unirrigated tracts legumes in variety are commonly grown.
	Baluchistan.—Attempts have been made in various parts of the Agency to promote the growth of the Mesquite bean.
	Delhi.—Zamindars are being advised to grow leguminous fodder crops which enrich the soil. During the year under report *berseem* and lucerne were sown at two and six different places, respectively.
30. Progress made in establishing pure and improved types of good Cattle (including buffaloes) with special reference to the policy of producing "dual purpose cattle." (Paragraphs 188—198.)	**Bombay.**—Farms exist for several of the breeds of cattle of the Presidency. Those breeds which are suitable for both milk and draught are being bred as dual purpose animals. In this Presidency there are two such breeds, the Gir and the Kankrej, and farms exist for both breeds. Great advance has been made in the increase of the milking quality and the draught qualities are receiving special attention. The purely draught types are being bred as such.
	The future policy with regard to cattle breeding in Sind will be considered when the Report of the Sind Cattle Committee appointed by Government to consider all matters relating to the future of cattle breeding in Sind under post-Barrage conditions is published.
	United Provinces.—Work at the Madurikund and Manjhra farms continued on the lines reported last year.
	(Funds could not be provided for the working of the third cattle-breeding farm at Jhansi.)
	Punjab.—A larger number of pure Hissar bred bulls was supplied during 1929-30 to districts from the Government Cattle Farm, Hissar, than in previous years. On March 31, 1930, there were 3,359 approved bulls working in the districts under the supervision of the Agricultural Department. The ~~Agricultural~~ standard of the village cattle is gradually being improved by means of large scale castration and increasing supply of pedigreebulls from the Government breeding farms. The Agricultural Department is concentrating its efforts in areas most suited to cattle breeding including the Hariana and Dhanni cattle tracts for which special live-stock schemes subsidised by Government are in operation. **Bihar and Orissa.**—A comprehensive note on the whole cattle situation in this province and the lines of policy to be adopted in future has been prepared and circulated for discussion. The most feasible line of development seems to be to get pedigree herds of Hansi-Hissar type of cattle kept

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VII.—Animal Husbandry—*contd.*	by the Court of Wards Estates and by large landed proprietors under the supervision of the Agricultural Department and to distribute their progeny to their tenants and other interested persons in restricted areas. The herd of Sahiwals at Kanke (Ranchi) farm has been kept in an efficient condition and progress has been made in forming a pedigree herd of good milch cattle mostly from Pusa stock. Work in breeding a dual-purpose animal from the Thar-Parkar breed is also in progress. The progress made in establishing a good herd of cattle at Cuttack in Orissa has not been very promising but the performance in milk yield of some local cows crossed with the Sahiwal is encouraging. Steady progress has been maintained in the breeding of pure Murra type of buffalo bulls for distribution at the Sepaya Farm in North Bihar and 50 of such pure-bred bulls have been distributed in various parts of North Bihar but mostly in Darbhanga and Muzaffarpur. **Assam.**—Action in regard to this item constitutes the only item of substantial progress the provincial finances have permitted. The Livestock Expert has thoroughly overhauled the Upper Shillong Farm and renovated the buildings in 1929-30. The Khanapara Cattle Farm in Kamrup district was begun in 1927 and is now completed. In the budget for 1930-31, funds were provided for the foundation of a cattle farm at Sylhet to serve the Surma Valley, at an ultimate cost of Rs. 21,500 recurring and Rs. 1,30,178 non-recurring. Since 1927 a few breeding cattle have been kept at the Jorhat farm, and have done so well that the permanent retention of a small herd is now contemplated. The following figures illustrate the progress made in cattle breeding :—

	Rs.	
Expenditure in 1926-27	19,067	
Ditto 1927-28	42,114	
Ditto 1928-29	33,077	
Ditto 1929-30	36,744	
Budget for 1930-31	1,23,060	(Includes Rs. 75,900 for Sylhet Cattle Farm).

The numbers of head of cattle on charge at the end of the year 1926-27 and of 1929-30 were as follows :—

	1926-27.	1929-30.
Breeding bulls	1	7
Cows	25	114
Calves and young stock	43	160

The purpose of the Upper Shillong Farm in respect of cattle breeding is to produce good milkers and breeding bulls to serve the demands of local dairymen and the tea estates. The herds maintained are chiefly Hariana, Patna and Patna crosses. All breeding is done from an Ayrshire bull.

In the plains farms, it is necessary in the first place to determine the classes of cattle which will prove hardiest to the climatic conditions of Assam. It is most desirable to improve the local breeds of cattle which are miserably poor. While it is hoped to improve milking quality it is impossible to make this the sole aim. The chief need of the farmer in either valley is a stronger draught bullock and the " dual purpose " animal must at present be the objective. Climatic and economic conditions would be adverse to any attempt at producing purely dairy herds. At Sylhet an attempt will be made to improve the milking quality of buffaloes, these animals being very widely used for ploughing in the Surma Valley.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VII.—Animal Husbandry—*contd.*	**North-West Frontier Province.**—The scheme introduced in 1929-30 for the importation of stud bulls of the Dhanni breed has proved a great success and the number of bulls at stud has risen from 23 to 125. The aim is to produce a good draught animal. Grants-in-aid are being made by the Government of India to augment the inadequate resources of District Boards. **Delhi.**—The improved type of cattle found in the province is of the Hariana breed. Cattle have suffered very much on account of the continued fodder scarcity which has prevailed in the province in past years. The year under report has been favourable as regards fodder and the condition of the cattle has improved. The veterinary staff has been instructed to open registers for entering all the good cows of Hariana breed in their respective jurisdictions with the object of keeping a check on the increase or decrease in the number of such cows in subsequent years. Eleven bulls of the Hariana type have been purchased and introduced in the province during the year ending 31st December 1930, against one in the preceding year, and steps for the introduction of more bulls of this breed are in hand. Many *brahmani* bulls are let loose in the province and special attention is being paid by this Department for approving those found fit for breeding purposes and castrating the rest. In the Punjab, all District Boards have passed bye-laws to stop the letting loose of undesirable bulls. The attention of the local District Board is being directed towards the matter. The breed of buffaloes in the province is good. The public realises the importance of keeping dams and sires of milking strains and efforts are also made to keep a check on letting loose of scrub buffalo bulls. The District Board is being asked to provide an allotment for the purchase of good buffalo bulls. **Coorg.**—The principle recommended is accepted. Attempts have been made to introduce new blood by the purchase of Amrit Mahal and Sindhi bulls, but the results are not as yet encouraging. It would probably be more satisfactory to try to breed up a good strain of local cattle. But conditions in Coorg are very bad. Two Sindhi bulls were obtained and stationed in two important centres of Coorg for breeding purposes. The opening of a cattle breeding station for the supply of cattle that will answer the dual purpose of milk and draught is under consideration.
31. Improvement of the Urban Milk and *Ghee* supply (paragraphs 199—201).	**Madras.**—The Madras Milk Supply Union sold milk to the value of Rs. 1,49,348 and milk products to the value of Rs. 7,406. Its chief purchasers were four of the leading hospitals in the city. As a result of these, the hospitals effected a saving of about Rs. 45,000 and the milk contractors brought down their rates. The question of further financial assistance to the Union for the erection of a pasteurizing plant was dropped. The Milk Supply Society at Madura collected and sold 1,438 measures of milk at a cost of Rs. 639. During the year, the Madras Prevention of Adulteration Act, 1918, was in operation in fifteen municipalities (including the Madras Corporation) and one Union Board in respect of all kinds of food. During 1930, the Public Analyst received over 1,000 samples for analysis under the above Act. A large proportion of these samples consisted of *ghee* and milk and in both the cases a considerable number of samples were grossly adulterated. In many cases legal action has been taken and convictions have resulted. **Bombay.**—Two schemes are now in hand in the Presidency, *viz*:— (i) The establishment of a Dairy District to maintain 20,000 dairy cattle eventually in one self-contained area ; and (ii) The collection and treatment of milk in Gujarat for the Bombay City Milk Supply. No action has been taken in Sind.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VII.—Animal Husbandry—*contd.*	**Bengal.**—An Advisory Committee has been constituted with a view to framing a new Bill for the amendment of the Bengal Municipal Act, referred to in the last Report. **United Provinces.**—The question was fully considered by a special sub-committee of the provincial Cattle-breeding Committee, but for lack of funds the sub-committee's recommendations could not be given effect to. The Co-operative department organized in Agra district societies for the sale of *ghee*. Members of these societies escape the disadvantages of incorrect weighments and unfair prices, and the societies endeavour to exercise some control over the quality of the *ghee* supplied. There are now ten such societies. A short term foreign scholarship of the value of Rs. 2,500 was awarded for the study of dairying to one Mr. Prem Sarup Caprihan of Dayal Bagh, Agra, where a dairy farm and a small but well equipped modern dairy are already in operation. A scheme of further improvement, to cost about two lakhs, is under contemplation. At the request of the Etawah Ghee Association, the Harcourt Butler Technological Institute, Cawnpore, made a number of suggestions to improve the methods of manufacture and quality of *ghee* and to reduce the cost of production. A bulletin on improvements in the manufacture of *ghee*, entitled " Problem of India's *Ghee* Supply ", has been prepared by the Oil Expert at the Harcourt Butler Technological Institute, and is being printed for publication. The United Provinces Prevention of Adulteration (Amendment) Act was passed in July, 1930. It provides for severer punishments than the original Act provided, for the adulteration of foodstuffs, including milk and *ghee*. Government have also secured powers under the Act to lay down standards of purity of various foodstuffs, including milk and *ghee*, and detailed rules on the subject have been published. The Public Health department has devoted much attention to the detection and prosecution of offences involving the adulteration of *ghee*. Chairmen of Municipal Boards are now required to submit quarterly statements of samples taken, prosecutions instituted, numbers acquitted and the adequacy or otherwise of the fines inflicted. The attention of District Magistrates is invited to cases where fines seem to be inadequate. Two Government circulars, drawing the attention of District Magistrates to the necessity of inflicting deterrent punishment in such cases, have been issued. The general effect of all these steps has been a fair increase in the average amount of fines inflicted. The central analytical staff has also been considerably strengthened. **Punjab.**—Efforts are being made to foster pure and improved types of buffaloes in the canal irrigated districts by the distribution of selected buffalo bulls in the villages. Special efforts are also made to provide selected buffalo bulls for service in municipal areas where large numbers of buffaloes are being maintained by private owners. **Bihar and Orissa.**—Nothing to add to the previous report. **Central Provinces.**—Bye-laws regulating the sale of *ghee* and vegetable products and prevention of adulteration have now been adopted by most of the municipalities. **Assam.**—The matter is being tackled on co-operative lines. Two inspectors trained in co-operative milk supply are being set to organize milk societies at Gauhati and Sylhet, and a number of societies have already been organized. At Sylhet, a Milk Union has already been formed, and it is hoped in course of time that there will be others. As suitable animals become available from the farms it will be possible to provide the Unions or Societies with milch cattle and perhaps breeding bulls. Other subjects will engage consideration in the light of experience. The *ghee* supply cannot be dealt with until the organization of grazing grounds becomes practicable. **North-West Frontier Province.**—The local bodies have been addressed on the subject and some municipalities have shown eagerness within their limited resources to improve their milk supplies.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VII.—Animal Husbandry—*contd.*	
	Delhi.—No improvement in this direction is possible without the co-operation of the municipalities. Towards the end of 1929, a scheme was put forward by the Delhi Health and Social Service Union for the formation of a company for the supply of pure milk. The Industrial Surveyor also put forward proposals, separately, with the same object. These schemes were carefully considered, but did not seem to offer much prospect of success.
32. Organisation of Co-operative Breeding Societies (paragraph 202).	**Bombay.**—The policy recommended is being followed in the Presidency and there are about 18 to 20 Cattle Breeding Societies doing work of variable character. No action has been taken in Sind. **United Provinces.**—No such society has yet been established but breeding bulls have been supplied to some co-operative societies. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. **Bihar and Orissa.**—No societies of this type have yet been organised and the local Government consider that their organisation in Bihar and Orissa would be premature at present. **Assam.**—The local Government consider that this is not feasible at present. **North-West Frontier Province.**—This recommendation will be borne in mind by the local Administration in connection with the extension of co-operation in the province. **Delhi.**—Propaganda for organising cultivators to form co-operative cattle breeding societies has been pushed on for the last two years. One society of the type has been organised in one village. It is doing excellent work. The persistent famine and drought have impeded the expansion of this useful work, which is surpervised by a veterinary officer deputed to the Co-operative department. The chief functions of such societies are to improve and control cattle breeding by means of binding its members to maintain approved cows, get them covered by approved bulls, properly maintained by the society, have all the scrub bulls castrated, observe hygienic rules for the proper upkeep of the animals and eliminate the uneconomic cattle from the area of operation.
33. Livestock Shows and Fairs (paragraph 203).	**Madras.**—A monthly cattle *shandy* (Fair) has been started as a preliminaray step at Ongole. If this proves a success, opening of *shandies* in other places will be considered. **Bombay.**—In the Presidency proper, cattle shows have been held for many years and these are gradually being extended as funds permit. The shows held by non-official bodies are also being subsidized by the Agricultural department and demonstration and lantern lectures are being given, as far as funds permit. In Sind, a cattle section was included at the annual Jacobabad Horse Show and prizes were given in various classes. An extension of such shows is under consideration especially in connection with ordinary agricultural exhibitions. **Punjab.**—The number of livestock shows and fairs has increased from 98 to 139. The department is making full use of these events to popularise its work in the villages. Exhibitions of livestock arranged in the Fair grounds in attractive and instructive manner and award of prizes to various classes of cattle have given very encouraging results.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VII.—Animal Husbandry—*contd.*	
	Bihar and Orissa.—A limited amount of prize-money is given at some of the large *Melas* (Fairs). Further work in this direction is hampered for want of funds. **Assam.**—Several local boards have held agricultural shows and assistance has been given from the Agricultural Department. **Baluchistan.**—A horse and cattle show is held in Sibi annually. **Delhi.**—No permanent cattle fair is held in the province but a one-day cattle show was held in March 1930. In 1931, five such shows are proposed to be held at different places. The establishment of a permanent cattle fair is under contemplation. **Coorg.**—Cattle shows and fairs are already being held and encouraged, prizes being given with regard to the classes for cows, calves, yearling cattle and bullocks. During the year two shows were held in two important centres with great success. Lectures on cattle breeding, preventive measures and the management of cattle in general were delivered at shows by the veterinary assistant surgeons.
34. Castration (paragraph 207).	**Madras.**—Scrub bulls and other male stock not required and not suitable for breeding purposes were castrated in large numbers ; the total number of castrations performed during the official year 1929-30 being 12,742 as against 9,480 in the previous year. The " Burdizzo " emasculator is freely being used and castration by this method is becoming more and more popular among the ryots. Owners were also advised to get rid of cows which were bad breeds and those that were unsuitable for stud purposes. **Bombay.**—The advisability of castration is demonstrated by the Agricultural Department at the shows and fairs, etc., while the operation is performed by the Veterinary Department. **United Provinces.**—No progress has been reported, but the Civil Veterinary Department is paying special attention to the castration of scrub bulls and a large increase in this work is expected. **Punjab.**—364,191 castrations were performed during the year 1929-30. **Central Provinces.**—75,869 castrations were performed in the province. **Assam.**—The Livestock Expert has decided upon the age of two years as the optimum for castration. The Veterinary Department has made increased and successful efforts at encouraging castrations. The number of operations in 1926-27 was 1,738 and 7,219 in 1929-30. **North-West Frontier Province.**—This work has been pushed on by the veterinary staff, especially in villages where stud bulls have been located. **Delhi.**—Immature bulls are castrated in the Delhi Province, especially in the villages where there are pedigree stud bulls. The number of castrations were 3,487 in 1929 and 5,839 in 1930. The castration of Brahmani bulls is a difficult task as it is against the religious sentiments of Hindus but every effort is being made in this direction. **Coorg.**—The recommendation has been accepted and the cattle owners are being educated on the importance of castration and elimination of scrub bulls.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration)
CHAPTER VII.—Animal Husbandry—*concld.*	
35. Control of Livestock improvement (paragraph 208).	**Bombay.**—In the Presidency this work is being carried out in conformity with the recommendation of the Royal Commission through a whole-time officer of the Agricultural Department. In Sind, there is no whole-time officer in charge of livestock improvement. The work is confined to the Red Karachi Dairy Breed of which a herd is maintained at the Willingdon Cattle Farm, Malir. Advice and assistance is given when necessary by the Livestock Expert to the Government of Bombay. **United Provinces.**—The existing practice which was approved by the Royal Commission, continues. **Punjab.**—The Livestock Officer referred to in the previous report has been relieved of all administrative charge of district work,and has been made Assistant to the Director, Veterinary Services, Punjab (for breeding), solely for the study of animal genetics and promoting schemes of cattle improvement. **Burma.**—Provision has been made in the Burma Agricultural Service, Class I, for a Livestock Officer. It may be necessary in the future to appoint such an officer but the local Government do not consider that the time has yet arrived. The Agricultural Department has opened a stock-breeding farm at Tatkon in the Yamethin District where it is proposed to build up a pure herd of the Burmese breed and attempt the improvement of the breed by selection. With the necessary staff the Deputy Director in charge of the East Central Circle, in which this farm is situated, can quite well manage to supervise the stock-breeding work for the present. **Bihar and Orissa.**—An inspector of livestock has been appointed whose main duty is to keep track of the pure-bred *Murra* type of buffalo bulls distributed from Sepaya and to carry on educational and propaganda work in this connection. **Assam.**—A Livestock and Dairy Expert was appointed on 1st January 1929, and placed in charge of cattle breeding under the Director of Agriculture.
CHAPTER VIII.—Forests.	
36. Grazing in Forest areas and Fodder supplies from those areas (paragraphs 218-219).	**Madras.**—The Agricultural Advisory Committee considered the question and the Government have passed the following orders :— (1) that the Forest department may encourage the cutting of grass in forests ; (2) that, as an experiment in certain places cattle may be confined to pens and grass cut and taken to them ; (3) that, in cases where particular grazing areas in forests have to be specially protected, they may be closed to cattle. Grass cutting is allowed free in this Presidency. Stall feeding has not yet become popular. A proposal to hand over to the Agricultural department one reserved forest for the better regulation of grazing and breeding is under consideration. **Bombay.**—Apart from *kurans*, there exists normally an area of 977 square miles of closed forests which is available in different parts of this Presidency for grass-cutting. Grass-cutting is encouraged throughout the Presidency but is only availed of in normal years to any considerable extent in districts which do not produce much in the way of *kharif* fodder crops (rice-straw and *kadbi*), *e.g.*, Khandesh and Panch Mahals. The need for hay does not appear to be felt in the Nasik, Surat, Poona, Satara, Dharwar and Bijapur districts on account of the ample grazing area provided. If there were any real demand for hay the area yielding it is capable of being increased but at present there seems no necessity for such action.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VIII.—Forests *—contd.*	Determination of the intensity of grazing consistent with proper development of tree-growth and of desirable grasses cannot yield a figure applicable to all localities. Differences in rainfall, soil, and quality-character of existing vegetation mean that what would amount to excessive grazing in one place would be quite permissible in another. The first requisite appears to be to devise a workable method of rotational grazing. Experimental rotational grazing is now being tried in the East Khandesh forest areas and some few years will have to elapse before conclusions as to its success and its workability on a large scale can be arrived at. It may be added in the words of agricultural experts who have made a special study of Indian grass lands that "No improvement can be initiated or maintained unless the number of animals to be grazed is limited". There is, as far as one can see, no hope of any limit being imposed until it is done of the people's own free will. Storage of grass was formerly undertaken by the Government of Bombay in large quantities in the North Thana area, in West Khandesh and in the Panch Mahals. These operations have been largely discontinued since, May, 1930, and are now confined to storage of 38 lakhs lbs. of dry grass per annum in the last named district, the work being distributed between a number of small contractors, the supplies to be maintained by them over a period of 20 years (ending between 1945-46 and 1948-49) with the stipulation that not less than 38 lakhs lbs. shall be in available reserve in any one year. Experience has shown that attempts to store grass on a scale which could afford any considerable measure of relief in a year of severe scarcity are exceedingly costly to Government and that, in normal years, the accumulated stocks can only with great difficulty and at great loss be disposed of in the open market. **Bengal.**—The forests in Bengal consist almost entirely of high timber forests in which there is practically no grass or other cattle fodder. Kalimpong is the only forest division in Northern Bengal in which open forest grazing is extensively carried on now. There are certain riverain forests in Northern Bengal which contain much grass, but in accordance with the instructions of the Government of India, on forest policy, issued in 1894, the preservation of these forests is essential on climatic and physical grounds and hence only very limited grazing can be allowed in these areas. In Chittagong in South-East Bengal, large numbers of cattle graze in the forests and since the hilly nature of the country prevents them penetrating into the interior the incidence of grazing in the edges of the forest is excessive. In plantation areas grazing cannot be allowed but grass has been offered free to any one who takes the trouble to cut it. The policy of replacing forest grazing by fodder cutting is being extended gradually by the provision of stall feeding sheds surrounded by exercise paddocks. It is not feasible for forest officers issuing grazing permits to exclude inferior cattle. As regards transport of fodder, the forests of Bengal do not contain fodder supplies in quantities sufficient to make export possible. **United Provinces.**—As regards grass-cutting as an alternative to grazing, the Afforestation Division of the Forest Department gives sufficient opportunities for the trial of grass-cutting *versus* grazing under circumstances which are much more favourable for cutting than those obtaining in the main blocks of the reserved forests. Changes in existing customs and habits must necessarily be slow, and are more likely to be brought about by economic conditions than by Government experiments or demonstrations. The Forest Department was again called upon to supply hay to meet a fodder scarcity. Work was distributed over six forest divisions and 76,000 maunds of baled forest hay were supplied, the greater part of which was sent to Muttra. The organisation of this work was considerably improved and the cost reduced. Hay was delivered at just under Re. 1 a maund, but even at this price trade in forest hay would not be a paying proposition. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report and against item 26 of the present report.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VIII.—Forests—*contd.*	
	Assam.—Forest areas in Assam are divided into three classes (*i*) reserved forests, (*ii*) village forests and (*iii*) unclassed State forests. The last category includes all land at the disposal of Government which has not been constituted as a reserved forest or a village forest. Settlement holders and their tenants in the temporarily-settled areas of the province are allowed to remove fodder free of charge from the unclassed State forests. There is very little suitable fodder grass in the reserved forests of the province and but little demand either for grazing in or the removal of fodder from those reserves. Consequently this represents a comparatively small aspect of the grazing problem in Assam. Where there is any demand for grazing in the reserves, this is permitted under such restrictions as are necessary to safeguard the forests, and a rule has now been issued allowing fodder grass on permit from such portions of the reserved forests as may from time to time be set aside for this purpose by the Divisional Forest Officer in consultation with the Deputy Commissioner. Permits will be for three, six or twelve months and a nominal fee only will be charged. **N.-W. F. Province.**—Subject to the observance of the recorded rights in grazing, the existing policy of the Forest department is to encourage grass cutting as an alternative to grazing. With this object in view grass cutting has been allowed along with grazing without extra fee in certain areas in order to cultivate the habit of grass cutting in the villagers. Selection grazing in favour of superior stocks is not possible until the people realise the value of the practice. **Baluchistan.**—In compliance with the recorded rights in grazing, out of the total area of 316 square miles of reserved forests, 143 square miles—45 per cent.—are open to grazing. The number of browsing animals, *e.g.*, goats and sheep, is very large, but as the people of this province are nomadic and live by keeping flocks no remedial action is likely to be effective until they settle permanently. The number of cattle, *e.g.*, cows, bullocks, etc., which graze in the reserved forests is very small. Fodder supplies from these forests are practically nil. **Coorg.**—Eighty-four per cent. of the area of the reserved forests was open to grazing. Free grazing in certain forests in consideration of the help rendered in protecting *sholas* or water sources and in other places under grazing licence is being permitted. A fair area in such of the reserves, as lie in the vicinity of village sites has been disafforested.
37. Investigation into cost and efficiency of Wood and Charcoal relative to that of Coal (paragraphs 220-221).	**Madras.**—Leaflets are printed and circulated to encourage ryots to grow trees on *poramboke* (common) lands. No further action was considered necessary. **Bombay.**—The mass of rural population will never buy or use fuel in the only form in which it can conveniently be transported by rail, *i.e.*, in billet form. Agriculturists, when they use wood fuel, do so in the form of sticks or faggots, the cost of transport of which by rail would be out of all proportion to the volume transported. The scrub forests and lands classed as pasture which are dotted about the Presidency are the means available for the solution of this question. This Presidency is well off in this respect, as such areas exist all over the Deccan and Karnatak plains. All that seems necessary is to ensure the permanency of tree-growth on such lands and to take definite steps to that end in all areas where no real control exists. Fuel depots have been established in certain coast towns in this Presidency and in Sind. Government are aware of the difficulties experienced in maintaining these and they do not consider it advisable to extend the system to other localities. The villager is not prepared to pay even the

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VIII.—Forests— *contd.*	most reasonable depot prices and naturally prefers to use his own cart and oxen, and, either under the paid permit system or the Privilege Codes, to go to the forest and bring his own fuel at his own convenience. Apart from the fact that in this Presidency such afforestation as is outlined in paragraph 221 of the Report seems unnecessary if existing forests are conserved, the high initial cost added to that of employment of special establishment rule out the possibility of creating plantations on a scale that would achieve any definite result. As matters now stand the Forest department have the greatest difficulty in withstanding the clamour for ever more disforestments. The prosperity of the spice gardens in Kanara, for instance, is due almost entirely to the efforts of the Forest department in resisting attempts to secure the ghats forests for *kumri* (temporary cultivation in jungle clearings) cultivation and in saving the valuable evergreen forests from destruction. **Bengal.**—No action has been taken as regards research into comparative values. The Forest department has been attempting for some years to find suitable agencies for selling fuel in the central districts of Bengal where the inhabitants have nothing to burn except cowdung, but have been handicapped by various factors of which railway freight was the chief. The establishment of fuel depots at railway stations as suggested by the Commission, would not, in the opinion of the local Government, be an economic proposition. Government forests in Bengal are badly situated. They lie along the Himalayas in the north and near the sea coast in the south. The very large area in between has no local source of fuel supply, but the creation of fuel plantations in this area will not be financially profitable as there is no suitable Government land which can be utilised for the purpose. **United Provinces.**—Investigations as to the possibility of establishing in the plains small village fuel plantations of quick-growing species to be entrusted to *panchayats* or villages with a view to substituting wood fuel for cowdung, have been initiated. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. The investigations referred to therein are not yet complete. **Assam.**—There are large supplies of wood fuel available in the reserved and unclassed State forests of Assam, but owing to the heavy cost of extraction and transport the cost of such fuel in the towns is high. Government propose to consider the possibility of creating (a) fuel *mahals* to be worked in conjunction with silvicultural thinning and felling in reserved forests and (b) fuel depots at suitable centres. Outside the towns the fuel problem is not serious in the temporarily-settled areas in Assam. Settlement holders and their tenants are allowed to remove timber for fuel for their own use free of charge, and the numerous village forests provide an abundant additional supply in the localities where they have been constituted. No experiments to investigate the comparative cost and efficiency of wood and charcoal as compared with coal have been undertaken in Assam nor would such experiments appear to be practicable at present. **N.-W. F. Province.**—Investigation into the comparative values of wood, charcoal and coal was carried on in the Hazara district and showed that the relative price of coal and charcoal, as obtained locally and considering the relative efficiency, is about the same. In most areas in the province the wood supply is abundant. **Baluchistan.**—Firewood and brushwood are the fuels in general use in this province. In the towns, charcoal is used, and firewood is imported from Sind. The existing forests are mainly maintained for the protection of the hill slopes, to avoid erosion and attract rainfall. There is little in the way of firewood in these forests.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VIII.—Forests— *contd.*	
38. Initiation of new and development of existing Forest Industries. (Paragraph 224).	**Madras.**—Long leases of the raw material from reserved forests required for paper and match-making have been given at concession rates.
	Bombay.—The chief forest products of the Bombay Presidency capable of providing occupation and profit to the rural labouring classes stand in no need of introduction to them by any special agency. The forest products which exist on a commercial scale consist of timber, fire-wood, charcoal, bamboos, and sandalwood with a certain number of more or less valuable minor products such as myrabolams, nux-vomica, *tarwad* bark, etc. The uses of these products and their commercial value are fully known. If the Forest department are aware that they are in a position to supply a particular kind of produce, which they consider has a prospective commercial value, they naturally take all possible steps to put it on the market, but the actual inauguration and financing of any new industry is best left in the hands of private enterprise. Expert commercial men and industrialists know what they want, and officers of the Forest department can and do afford them every facility for exploiting any particular forest product. The match industry is a case in point, and is now well established in the Presidency. The first essential was to discover what indigenous woods were suitable. Inquirers were able to get valuable assistance from Dehra Dun and were supplied with samples and trial consignments of various woods by local Divisional Forest Officers. Manufacturers have now found that the most suitable indigenous timber for the manufacture of matches is *simul* (*Bombax*). Consequently the Forest department have given wide facilities for the extraction of this species at favourable rates and are also experimenting in the formation of plantations for the production of *simul* in the future. Charcoal is already manufactured on a fairly large scale in the Presidency. It is a question of supply and demand. The same may be said of oils, gums, tanning materials, etc. A trade in these products already exists according to the supplies available. **Bengal.**—The chief recent developments in industries have been the increase in carriage of fuel and charcoal by rail and opening of a saw mill. Experiments in the case of patent charcoal kilns are proposed and will be carried out as soon as funds are available. A forest utilisation officer has been appointed. He is at present engaged in finding markets for the exploitable surplus of timber outside Bengal. **United Provinces.**—The most important feature of the year was the firm establishment and expansion of the match industry at Bareilly, the fruit of many years of experimental work at the Government Central Wood-Working Institute, Bareilly. The Western India Match Company has built and is working a large new factory on part of the old Clutterbuckganj forest estate, which was acquired for locating factories using raw materials from Government forests. It has also taken over control of the Bareilly Match Factory. The result is a large increase in the consumption of *simul* wood from Government forests. Investigations are in progress to ascertain the quantity of this timber available and results already obtained show that unexpectedly large quantities are available. A revision of the working plans controlling the felling of these species is being taken in hand. Experiments resulted in the manufacture of a cheap variety of bleached paper from *kans* and *dab* grass, which abound in Bundelkhand and the matter is being further investigated. The pulp from these grasses is being tried at the Lucknow Paper Mills. These grasses are weeds which infect large areas of agricultural land and the question of their eradication has long been under consideration. If the paper-making experiments in train prove commercially successful a great problem will have been solved. Experiments to discover a wood suitable for the manufacture of pencils are also in progress and samples of various woods have been supplied to the Agra Pencil Factory for test. The lac and shellac industries continue depressed.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VIII.—Forests— *contd.*	
	Assam.—The Forest department in Assam has hitherto been too short-handed for the local Government to contemplate the appointment of a 'Utilization' officer. A few years ago, it seemed that *sâl* was the only timber in Assam which could be profitably worked, and the local Government, impressed by this fact and the need of economy in a time of financial stringency, reduced its forest department staff. Ensuing years however witnessed a remarkable change. Not only was the demand for *sâl* substantially increased, but, owing to the installation of creosoting plants at Naharkatiya and Margherita and to the establishment of a veneering factory for the manufacture of tea chests at Margherita, in themselves new forest industries of considerable importance, a very substantial demand arose for timbers which had been hitherto considered as practically unmarketable. The consequence was that Government were compelled to take steps to augment their forests staff, which had found itself unable to cope with the increased demand, and at the same time to carry out the regeneration and the preparation of working plans necessary to preserve the forests against excessive exploitation. This period of comparative prosperity has been followed by another period of acute financial depression with its concomitant slump in the timber trade, and any further increase in the staff under existing conditions will obviously be out of the question, but the local Government will consider whether, if the present slump in the general timber trade continues, it will be possible to provide for the appointment from the existing forest staff of a "Utilization" officer on the lines recommended by the Royal Commission on Agriculture. There is only one important minor forest industry in Assam, *viz.*, the cultivation of lac, which is a great asset in the material prosperity of the people of the hill tracts of the province. The industry is growing and the local Government consider that a trained lac officer will be necessary to look after it. The question of appointing such an officer was recently considered but was dropped in view of the financial stringency.
	N.-W. F. Province.—Resin extraction and departmental exploitation of timber are the only forest industries in existence at present. No new industries have been initiated.
	Baluchistan.—The collection of a medicinal herb named *Ephedra Vulgaris* to the extent of 1,600 maunds formed a part-time occupation for agriculturists in various places in the Sibi and Loralai districts. Other herbs, *e.g.*, *Artemisia*, *Zira* spice and *Zufa* are locally consumed.
39. Disafforestation of Forest Lands required for construction of Small Irrigation Works. (Paragraph 225.)	**Madras.**—There has been no demand in this Presidency for disreservation for the construction of small irrigation works.
	Bombay.—No case is known in this Province where disafforestation to promote irrigation works is required.
	Bengal.—The disafforestation of forest land for construction of small irrigation works is not, in the opinion of the local Government, necessary but would add considerably to the difficulties of administration. If permission to use land within forest limits for this purpose were required, it would be given.
	United Provinces.—The Kumaon Forest Committee was useful during the year in drafting rules regarding irrigation channels which establish custom and procedure not hitherto defined by rules.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VIII.—Forests— *contd.*	**Assam.**—This question is of no importance in Assam, where irrigation is but rarely required for cultivation. The cultivator's problem in Assam is usually excessive inundation and not the want of water. **N. W. F. Province.**—Where people require irrigation channels through the reserved forests, which are situated mainly in the Hazara district, these are allowed.
40. Control of Shifting Cultivation. (Paragraph 228.)	**Madras.**—Shifting cultivation is not permitted in the reserved forests of this Presidency. **Bombay.**—Shifting cultivation or *kumri* is now restricted to a very small area in this Presidency and is well under control. Lopping is freely allowed under certain prescribed methods in regions where *rab* beds are used for agricultural purposes. **Bengal.**—The *Taungya* system of shifting cultivation under proper control is being extended as rapidly as possible with advantages to the local population in the way of food and work. Experiments are being made with a view to improve the methods of *jhuming* in the Chittagong Hill Tracts. **United Provinces.**—Attempts are being made to extend the use of shifting cultivation under control for regenerating forests where other methods of regeneration prove impracticable. **Burma.**—There are large tracts of land along the foot-hills and in the hill districts of Northern Burma which require development and the Director of Agriculture has proposed to open a ninth agricultural circle to deal with the problem of "shifting cultivation" among others in Northern Burma. The local Government have added a ninth post of Deputy Director of Agriculture to the cadre of the Burma Agricultural Service, Class I. **Assam.**—The local Government, as the report of the Commission shows are already working on the lines recommended and endeavouring to introduce stable methods of cultivation not only in the Naga Hills but also in other areas inhabited by the aboriginal tribes who now practice *jhuming*. **N. W. F. Province.**—There is no shifting cultivation in the reserved forests of the province. **Baluchistan.**—Shifting cultivation is not practised in this province.
41. Classification of Forest areas. (Paragraph 229.)	**Madras.**—The forest areas in this Presidency have already been classified. **Bombay.**—Disafforestation in favour of agriculture has probably proceeded as far as it can safely go in Bombay, but there are vast areas of land still included in Forest Proper which it will be found advisable to reclassify as lands the management of which should be directed solely to the service of agricultural interests. **Bengal.**—The question of disafforesting land suitable for cultivation was taken up during the course of settlement operations in the Chittagong district. So far about 10,635 acres of land have been excluded. Some of

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VIII.—Forests— *contd.*	
	the Sundarbans protected forest area is also marked down for colonization but clearing of deltaic land before it has been raised to a sufficiently high level is undesirable. Excluding unclassed forests in the Chittagong Hill Tracts, the area of Government forests is only 9 per cent. of the area of the province. **United Provinces.**—Further new classification is not required in the United Provinces, as stated in the previous report. **Bihar and Orissa.**—As already stated in the previous report, the local Government do not consider any general reclassification of forest areas to be necessary. The Conservator of Forests has since investigated the question of altering the classification in two possible areas, Sambalpur and Palamau, but here also he does not recommend any change. Government have, however, issued instructions that the question of forming separate fodder reserves or grazing Working Circles should be kept in view when the working plans are prepared or revised. **Assam.**—The recommendations of the Commission in this matter have been supported by the Forests Enquiry Committee recently appointed by this Government and their proposals are under examination. It must, however, be remembered that in Assam, which still possesses large tracts of unsettled land much of which is under jungle, an exhaustive enquiry of the nature indicated would be a very difficult undertaking. The local Government, however, recognize the advantage of such a classification and the importance of carrying it out before the uncontrolled opening out of waste land makes it too late to be of any value. A complete classification of the whole province is not at present a practical proposition, but the work might be begun in areas where the pressure of population is greatest and later be gradually extended as the pressure on the land spreads. **N. W. F. Province.**—The present classification of forest areas into Government reserves and *Guzaras* does not need revision. **Baluchistan.**—The area under 'Reserve' and 'unclassed' forests in this province is 316 and 472 square miles, respectively.
42. Establishment of Village Forests. (Paragraph 230.)	**Bombay.**—The local Government consider it entirely premature to hand over any pasture lands to purely village control though at some distant date such a step may become feasible. **Bengal.**—This proposal was fully considered by the local Government and found definitely unsuitable for the conditions existing in Bengal. **United Provinces.**—The officer who visited Madras to study the village forest movement there, was placed on special duty in Kumaun in connexion with the formation of *panchayat* (village) forests. A good start was made and a considerable number of *panchayat* forests were provisionally organised in Almora and Garhwal. Draft rules for these forests were considered by the Kumaun Forest Committee and are now with Government. The movement is a promising one. In Garhwal, the villages generally have walled and sown areas entrusted to them. Government have also approved investigations being made into the feasibility of establishing village forests in the plains, corresponding somewhat to *panchayat* forests in the hills. The underlying idea is to create fuel plantations of quick-growing species with a view to substituting wood fuel for cowdung.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER VIII.—Forests—*contd.*	
	Assam.—There are now 33,881 acres reserved as village forests in Assam but it must be admitted that they are not under proper management and control. The staff of the Forest Department is inadequate even to deal with the major forests and cannot provide any suitable inspecting or advisory agency for the village forests while the people for whom those forests have been created have not the requisite knowledge to work the forests on sound lines, even if they had any desire to do so. These forests are in fact regarded mainly as fuel reserves to be utilized for the needs of the moment without regard to the requirements of the future. It may be possible later to arrange for the creation of an agency which will inspect and advise the villagers on the means of conserving as well as utilising the resources of these village forests. **N. W. F. Province.**—*Guzara* forests correspond very closely to village forests, and these are as large as possible considering the forest area in the administered districts of the province.
43. Creation of Minor Forest Divisions. (Paragraphs 231—232.)	**Bombay.**—The question is under the consideration of the local Government. **Bengal.**—There are certain forest areas in the Chittagong Hill Tracts and in Chittagong district which are in charge of the Revenue Department. There are no forest areas in charge of the Forest Department suitable for being set apart in the manner and for the purposes proposed by the Royal Commission. **United Provinces.**—As already reported last year, the Afforestation Division of the Forest Department is practically an example of what was suggested by the Royal Commission for a minor forest division. In this division, it is not expected that expenditure will be covered by revenue. Advice and help are given free to land and forest owners, experiments are undertaken on a small and also a large scale, and demonstration work is scattered in a manner which would not be adopted were financial results the determining factor. The appointment in Kumaun of a revenue officer on special duty in connexion with the establishment of *panchayat* forests really constitutes a second example of a minor forest division, although for reasons special to the history of forests in Kumaun, this charge is held by a revenue officer and is under the Revenue Department, the Forest Department supplying technical advice and help only. **Assam.**—On account of the inadequacy of staff, it is not possible at present to carry out these recommendations but if and when an agency is appointed to supervise the management of village forests, that agency might be utilized for the management of the other areas which would be included within the minor forests contemplated by the Commission. **N. W. F. Province.**—No further sub-division of forests is possible without extra funds and staff.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTE R VIII.—Forests— *concld.*	
44. Institution of Short Courses in Agriculture for newly recruited Forest Officers. (Paragraph 233.)	**Bombay.**—The question is under consideration. **Bengal.**—The recommendation has been accepted by the local Government. It cannot, however, be given effect to until the Agricultural Institute at Dacca materialises. **United Provinces.**—No action has yet been taken. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. **Bihar and Orissa.**—The local Government have accepted the recommendation in principle but they have decided that the matter should wait until an agricultural college has been established in this province as the deputation of forest officers for training at an agricultural college in another province where conditions differ from those in Bihar and Orissa is unlikely to serve the end in view. **Central Provinces.**—No action has yet been taken. **Assam.**—The local Government are of opinion that in the existing circumstances of this province no practical advantage would be derived from requiring newly recruited forest officers to undergo a short course in agriculture. **N. W. F. Province.**—No action is necessary as the local Forest Establishment is combined with the Punjab Forest Department.
CHAPTER IX.—Diseases of Livestock and their control.	
45. Adoption of Serum-simultaneous method of Inoculation against Rinderpest. (Paragraphs 237—244.)	**Madras.**—Inoculation against rinderpest by the serum-simultaneous methods was uniformly adopted and was performed on an extensive scale during the year, free of cost. The position seems rapidly to be approaching the stage where a charge would be willingly paid by the owners of animals. The question will, however, be examined by the Special Rinderpest Officer proposed to be appointed. The serum-alone method of inoculation was restricted to the absolute minimum, having been resorted to mainly in the case of compulsory inoculation enforced under the Madras Cattle Diseases Act. The total number of serum-simultaneous inoculations performed during the year to the end of November 1930 was 143,690 as against 124,783 during a corresponding period in the previous year. **Bombay.**—In the Presidency proper, steps are being taken to extend the use of this method of protecting stock against rinderpest, but it is felt that for the method to be adopted on a large scale, a virus station in the Presidency is essential. Proposals in this direction and for the allotment of a separate annual sum for a campaign against this disease were received, but the prevailing financial stringency prevents the adoption of such a course for the present. Recently all susceptible stock in the village of Turkewadi were protected against rinderpest by this method. Of these 80 were inoculated with Muktesar virus and 508 were inoculated with virus from buffaloes suffering from a natural attack of the disease. The results are awaited with interest. Arrangements are also in hand to protect certain stock on Government farms and also that belonging to two more breeding societies in Dharwar District. As regards Sind, no attempt has yet been made to introduce this method as cattle owners in Sind are, as a rule, too ignorant to appreciate the benefits of this inoculation. It is only with the greatest difficulty that people can be persuaded to have their cattle inoculated with the serum-alone method and in many cases treatment of any kind is refused.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IX.—Diseases of Livestock and their control— *contd.*	
	United Provinces.—The serum-simultaneous method of inoculation was carried out during the year on a small scale among the cattle belonging to the Allahabad Agricultural Institute and the Leper Asylum, Allahabad, with satisfactory results. Further experiments will be carried out and it is proposed to employ a veterinary inspector who will devote most of his time to this work.
	Punjab.—The work was carried on in certain districts with successful results.
	Bihar and Orissa.—Question of extending this method of inoculation on wider scale is receiving attention.
	Central Provinces.—A start was made during the year and about 2,000 animals (both Government and private) were protected by serum-simultaneous method.
	Assam.—The serum-simultaneous method of inoculation against rinderpest has hitherto only been used on the Government farms. The present average cost of the serum-alone method is about Rs. 20,000 to Rs. 25,000 per annum. It is given free in time of epidemic.
	Baluchistan.—As the cattle owners of this province are mostly nomads, the method of serum-simultaneous inoculation is not practicable.
	Coorg.—The question of introducing serum-simultaneous method of inoculation has been considered and a campaign has been started to deal with cattle diseases, particularly rinderpest, by serum-simultaneous inoculation method. A senior veterinary assistant surgeon has been trained at the Imperial Institute of Veterinary Research, Muktesar, in this method of inoculation. It is hoped to bring this inoculation system into active use in 1931. Arrangements were made with the Government of Mysore to try to prevent the transmission of cattle diseases from Mysore to Coorg.
46. Compulsory Inoculation. (Paragraph 244.)	**Madras.**—The protection of milch cows and draught bullocks by the serum-simultaneous method of inoculation in the City of Madras is gaining popularity among cattle-owners. The question of the introduction of legislation to make inoculation against rinderpest by the serum-simultaneous method compulsory in the case of milk sellers in large cities, particularly Madras, has been deferred till the serum institute is established for this Presidency which will ensure an adequate and unfailing supply of serum. A scheme is, however, being worked out in consultation with the Corporation authorities. The Special Rinderpest Officer will also consider whether compulsory inoculation should be done by the serum-simultaneous method also and not exclusively by serum-alone method as at present.
	Bombay.—In the Presidency proper, no action has yet been taken.
	As regards Sind, Government have decided that in the case of the cattle of milk sellers, it is not necessary to take any steps in the matter. As regards the rural population, it would require a very large staff of veterinary police to enforce this measure.
	United Provinces.—Nothing has so far been done to make inoculation compulsory.
	Burma.—The Corporation of Rangoon has agreed to the addition of the following new rule as Rule 13A to the rules for Dairies and Cowsheds contained in Chapter XIII, Schedule II to the City of Rangoon Municipal Act. This has been published for criticism. "Every owner of milch cattle kept for sale of their milk shall cause or permit such cattle to be inoculated against rinderpest." Action as regards other municipalities has been postponed until the new Burma Municipal Act is passed.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IX.—Diseases of Livestock and their control— *contd.*	
	Bihar and Orissa.—The question of taking measures for the control of milk supply in municipal areas is still under the consideration of Government.
	Assam.—No action has yet been taken to give municipal boards greater powers to register milk sellers or to compel immunisation and segregation, and it is not considered desirable to undertake legislation for the purpose until the municipal bodies have more experience of the use of their existing powers in regard to pure food supplies.
	Delhi.—Compulsory inoculation is not in force in this province though its necessity in outbreaks where zamindars do not agree to have their cattle inoculated is greatly felt. The Civil Veterinary Department is doing its best by persuasion and propaganda. The number of inoculations as compared with the same period of the last year is as follows :—

No. of inoculations done.

Rinderpest.		Hæmorrhagic Septicæmia.	
1929	1930	1929	1930
929	1,440	..	860

	Coorg.—The recommendation will be considered after the serum-simultaneous work is started.
47. Increased provision of Veterinary Hospitals and Dispensaries. (Paragraph 248.)	**Madras.**—As stated in last year's report, the ultimate goal is to have one veterinary dispensary for each *taluk* and with this object in view, the number of dispensaries is increased year by year according to the needs of the district. During the year under report, the opening of seven new dispensaries was sanctioned by Government, and of these, six were opened during the year. The annual recurring expenditure is Rs. 14,896 and non-recurring Rs. 6,650. The work of converting veterinary dispensaries into properly equipped veterinary hospitals at headquarters of districts, where these do not at present exist, is also in progress. The staff of touring veterinary assistant surgeons was also increased during this year by six, involving an ultimate annual expenditure of Rs. 12,304.
	Bombay.—In the Presidency proper, it has not been possible to provide any more hospitals and dispensaries during the year. Several local bodies are anxious to have more dispensaries but as Government are unable at present to make provision for further grants-in-aid, the opening of these institutions has had to be delayed. As regards Sind, proposals were submitted for more veterinary dispensaries and veterinary assistant surgeons but the scheme cannot be carried out owing to financial stringency.
	Bengal.—The local Government accept the recommendation in principle.
	United Provinces.—Six new dispensaries were opened during the year. District boards again did not avail themselves to any great extent of Government grants for the construction of dispensaries and hospitals, the plea being that they had not the resources to meet their half share of the cost of construction.
	Punjab.—There were 258 veterinary hospitals in the Punjab in 1928-29, and 12 new ones were started during 1929-30, providing a net-work of 270 hospitals for the province. The number is being augmented each year.
	Burma.—Necessary amendments will be made in the Burma Municipal Bill, 1927, when it is next revised, so as to provide better for the maintenance of veterinary dispensaries in municipalities and for duties of Municipal Councils in respect of cattle disease generally.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IX.—Diseases of Livestock and their control— *contd.*	**Bihar and Orissa.**—The action taken on this recommendation has already been mentioned in the previous report. One new veterinary dispensary has been opened by the district board of Puri and the question of opening another in the Singhbhum district is under consideration. **Assam.**—No extension has been possible, though the recommendation is recognised as desirable. **North-West Frontier Province.**—Forty touring dispensaries were in existence at the end of March, 1930. These open once a week and are run by the veterinary assistant in charge of the nearest veterinary hospital. Proposals for additional dispensaries and staff were submitted to the Government of India. **Baluchistan.**—The question of increasing the veterinary dispensaries in this province is under consideration. Proposals for extra establishment could not be given effect to for lack of funds. **Delhi.**—There are at present 5 dispensaries in the province. It was proposed to open a new dispensary at Alipur, but the proposal has been deferred for the present on account of financial difficulty.
48. Re-organisation of Provincial Veterinary Departments. (Paragraphs 249—254.)	**Madras.**—Thirteen additional posts of veterinary assistant surgeons on an annual expenditure of Rs. 14,560 have been sanctioned since the submission of the last report. **Bombay.**—The question of constituting the new Provincial Veterinary Services (Classes I and II) is receiving the attention of Government. Three more veterinary assistant surgeons were appointed during the year, bringing the number employed in the Presidency proper up to 123. In Sind, no action can be taken without adequate funds. **Bengal.**—The recommendations have been accepted in principle by the local Government and their Veterinary Adviser has been asked to carry out such of them as may be advantageous and do not involve the provision of funds. A Higher Bengal Veterinary Service has been constituted. **United Provinces.**—Lack of funds and lack of trained staff again stood in the way of a reorganization of the Veterinary department. Financial conditions did not permit of an increase in the rates of pay of veterinary assistant surgeons, and it is difficult to secure men on the present rates of pay, which are less attractive than the rates in other provinces. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. The designation of the Chief Veterinary Officer of the Punjab has since been changed to "Director, Veterinary Services, Punjab". **Burma.**— The Burma Veterinary Service, Class I, rules have issued but the framing of the Burma Veterinary Service, Class II, rules and proposals for the reorganization of the staff are still under consideration. **Central Provinces.**—Rules regarding the constitution of and conditions of service in the Central Provinces Veterinary Service, Class I, were framed. The question of the revision of the scale of pay of Central Provinces Veterinary Service, Class II, and the abolition of the posts of veterinary inspectors is under consideration of the local Government.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IX.—Diseases of Livestock and their control— *contd.*	
	Assam.—The recommendations are generally accepted by the local Government and are in force so far as possible. The employment of veterinary assistant surgeons is in the hands of the local boards, which can appoint their own nominees if approved by the Superintendent, Civil Veterinary Department, and are consulted in regard to the posting and discipline of officers borrowed from the department. Government pay one-third of the average charges for the salaries of veterinary assistant surgeons loaned to local boards. A reserve under Government of twelve officers is sanctioned for leave purposes, from which assistance can be given at time of epidemics, and two staff veterinary assistant surgeons are employed for epidemic and other duties. The Superintendent, Civil Veterinary department, is not under the control of the Director of Agriculture but is the head of a separate department. A scheme has been placed before the local Government to carry out the Commission's recommendations by the raising of the pay and status of the Director and his office, the appointment of two Deputy Directors, ten district veterinary surgeons to control epidemic and contagious diseases and 184 veterinary assistant surgeons and the creation of hospitals at seven more stations. As the estimated cost of these proposals to Government and the boards would be recurring Rs. 2,72,032, and non-recurring Rs. 4,34,000 it is not likely that any considerable advance will be made in the near future. The matter has not yet been considered in detail. The most urgent need is the expansion of veterinary dispensaries under the boards. **Baluchistan.**—The question was taken up but, owing to financial stringency, the proposal had to be dropped for the present. **Coorg.**—The staff of the Veterinary department was strengthened by the addition of a veterinary assistant surgeon and two compounders. Two students have been sent to the Madras veterinary college for training with a view to qualifying as veterinary assistant surgeons.
49. Separation of Agricultural and Veterinary Departments in the Punjab. (Paragraph 251.)	**Punjab.**—The action taken on this recommendation has already been mentioned in the previous report.
50. Training of Veterinary Surgeons and Veterinary Assistant Surgeons. (Paragraphs 255-258.)	**Madras.**—Since the last report was written, the Government have sanctioned a new curriculum and it has been introduced with effect from 1st July, 1930. In this curriculum, special prominence is given to anatomy, physiology and diseases of cattle as recommended by the Commission and the course of instruction is limited to three years as before. The staff of the college has also been enlarged, the number of lecturers borne on the gazetted staff at present being seven, excluding the Principal, as against three prior to the introduction of the new curriculum. The preliminary educational standard required of the students for admission to the college remains the same as in previous years, *viz.*, S.S.L.C. with 45 per cent. in English, but in order to induce young men with higher educational qualifications to join the college, fourteen of the forty seats in the college are reserved for intermediates in arts and six for science graduates, every year. On appointment to the department, three years' seniority will be given in the case of intermediates and five years' similar seniority in the case of science graduates. These men will not, however, be given stipends while at college. The additional cost amounts to Rs. 27,624. **Bombay.**—The recommendations of the Royal Commission have been accepted in principle and the proposals from the Imperial Council of Agricultural Research as to a suitable curriculum for the training of veterinary assistant surgeons are awaited.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IX.—Diseases of Livestock and their control— *contd.*	
	Bengal.—The local Government have accepted the recommendations and await examination of the whole question by the Veterinary Committee of the Imperial Council of Agricultural Research.
	United Provinces.—No State veterinary scholars were sent abroad for training during the year, but six scholars were undergoing training in the United Kingdom. One scholar passed out creditably and secured a diploma as M. R. C. V. S. from the Dick College, Edinburgh.
	Thirteen scholars were sent to the Bengal and Patna Veterinary Colleges for training as veterinary assistant surgeons.
	Burma.—The matter is still under the consideration of the local Government.
	Bihar and Orissa.—The Bihar and Orissa Veterinary College was started on the 1st July, 1930, and the syllabus and provisional rules and regulations of the college were duly approved by Government. The question of opening a post-graduate class for the training of subordinate officers of the Veterinary department is under consideration.
	Central Provinces.—Two scholars were awarded scholarships and sent to England for the M. R. C. V. S. course in August, 1929. Twenty-two scholarships were awarded to suitable local candidates for training at the Bombay Veterinary College. Two veterinary assistant surgeons were also deputed to the Imperial Institute of Veterinary Research, Muktesar, for short courses of training extending over a period of six months with a view to employ them on the serum-simultaneous method of inoculation against rinderpest.
	Assam.—The local Government agree generally with the suggestions of the Commission, but are not closely concerned, as veterinary students are trained outside the province, which has no veterinary college of its own.
	Baluchistan.—There are no appointments of veterinary surgeons in this province, which has no training college of its own. Only candidates trained at one of the veterinary colleges in India are employed as veterinary assistant surgeons.
51. Research work in Provincial Veterinary Colleges. (Paragraph 261.)	**Madras.**—A well-equipped laboratory already exists in the Madras Veterinary College and extensions to this laboratory on a large scale have been sanctioned by Government at a cost of Rs. 1,19,300 and work is in progress. With the recent increase in the gazetted staff of the college and the provision of additional laboratory equipment in the near future, it is anticipated that officers will be able to devote more time to research work than has hitherto been possible. The Special Officer for rinderpest who is proposed to be appointed will also do some research work.
	Bombay.—The provision of a well-equipped laboratory has been postponed owing to financial stringency.
	United Provinces.—There is no veterinary college in the province. Minor research work was continued at the departmental laboratories at Lucknow, Agra and Allahabad. Research work which cannot be undertaken in these laboratories has to be referred to the Imperial Institute of Veterinary Research, Muktesar. The Director considers that the appointment of a research officer is a serious need of the department.
	Punjab.—Work of an original character was carried out at the Punjab Veterinary College, Lahore.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER IX.—Diseases of Livestock and their control— *concld.*	
	Burma.—The Director of Veterinary Services has submitted a scheme for continuing the main work of research at the laboratory adjacent to the Veterinary College at Insein and for the annual transfer of bacteriological work during the rainy season from Insein to Mandalay. The local Government have decided that for a year or two at any rate the post of Principal of the Veterinary College, Insein, should be combined with one of the two posts of research officer in a single incumbent as at present, but it is contemplated that these two posts should ultimately be filled by separate incumbents. It is not at present contemplated that other members of the teaching staff of the College (which has not yet been re-opened) should be concerned with research.
	Bihar and Orissa.—The action taken on this recommendation has already been mentioned in the previous report. There was considerable delay in the recruitment of the Professor of Pathology and Bacteriology, who is also the research officer, and he remained fully occupied with teaching work and equipping the different sections of the laboratory throughout the year.
	Central Provinces.—No veterinary college exists in the province.
	Assam.—*Vide* remarks against item 50 above.
CHAPTER X.—Irrigation.	
52. Review of position in regard to outstanding Irrigation Projects. (Paragraph 275.)	**Bombay.**—The matter is under consideration.
	Bengal.—The recommendation is accepted by the local Government. The proposal is already in force in Bengal.
	United Provinces.—Of the projects shown in the last report as abandoned or kept pending, the one for the Kaprar weir in the Jhansi district, has been further examined and an alternative cheaper and more suitable project for a weir on the Jumna river at Kandhari has been prepared and is under consideraion. A detailed project for the Beawar branch extension has been prepared and is under consideration. The Anti-Minor extension has been sanctioned and work is in progress. A project for a canal scheme from the Gangan river in Moradabad district has been prepared in conjunction with the Rampur State and the matter is now under discussion with the Political Agent to the State. A survey has also been carried out for a project from the Aril river in the Bareilly district and is under consideration. Financial conditions made it impossible to give effect to the proposal to form a project circle, with the surplus staff of the Sarda construction circles, for a general investigation of possible canal schemes in the province.
	Bihar and Orissa.—The practice of reviewing the projects at suitable intervals continues to be observed.
	Central Provinces.—The work of the Irrigation department has lately been reviewed by a Committee. Until cultivators in the areas commanded by irrigation works show by results that they appreciate the advantages of irrigation and are prepared to pay for them, no new irrigation projects are likely to be undertaken.
	Assam.—This province is scarcely concerned. The rainfall being high throughout Assam, the problem is generally rather the disposal of surplus water than irrigation and there is no irrigation branch.
	North-West Frontier Province.—Projects are being worked out for flood control and storage in the Dera Ismail Khan district and for putting the Paharpur Canal in the same district on a proper footing after the floods from cross drainages have been controlled.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER X.—Irrigation— *contd.*	
	Baluchistan.—Projects already investigated, fully or partially, have been classified in a priority list for further investigations, where necessary. Additional projects are under investigation and these will be added to the priority list, which will be amended yearly. Any projects investigated and found impracticable, either politically or financially, will be filed, finally, with a note explaining the reasons for abandoning the project, and a record of such projects will be maintained.
53. Investigation and experiment on Sale of Water by volume. (Paragraph 277.)	**Bombay.**—The matter is under consideration.
	Bengal.—The sale of water by volume is an ideal which the local Government would like to see realised. There are, however, very great difficulties in the way as noticed by the Commission. One of the greatest difficulties in Bengal and probably elsewhere in the distribution of the supply is to prevent the strongest man taking away all he can get at the expense of the weak. In provinces where the cultivator owns a comparatively large area of land, it is possible to give him his own outlet but in Bengal the areas are usually small and often not contiguous, so that separate outlets cannot be given to individual cultivators. The practice in this province is to adjust the sizes of the outlets to the areas under lease in a particular village at the rate of 60 acres per cusec. The best method to distribute the water seems to be by means of village channels and field channels so that no field is at a great distance from a channel. At present, there are very few such channels and the result is that the cultivator near the outlet gets more than he requires, whereas distant fields sometimes may get very little or none at all. In a case in which the conditions are as they are in Bengal, *i.e.*, small holdings, it is essential that the control over distribution should be maintained by the canal officer. The Chief Engineer is in correspondence with the Agricultural department in regard to the establishment of a farm on the Damodar Canal, an irrigation canal under construction, for the express purpose of ascertaining the exact amount of water required for raising the paddy crop. If it is proved, as is thought highly probable, that much less water is required than now given, a large extension of irrigation can be effected with comparatively little additional cost for minor channels as compared with the additional revenue that will be obtained. **United Provinces.**—This question has been carefully considered. The conclusion arrived at is that it is impossible under present conditions to institute any system of volumetric sales of water for irrigation purposes for the following reasons :— (*a*) No suitable meter has yet been devised for recording the volume of water passed through an outlet, though the problem has been under investigation for 30 years. The meters so far devised are either too delicate for use in the field or so expensive that their wholesale use is out of the question. (*b*) Even were it possible to measure the water passing through an outlet, it would still be necessary to split up the volume used among the numerous cultivators served by an outlet. It would be impossible to apportion to each cultivator the cost of the volume of water actually used by him and the advantage of measuring volume would be lost. Although no action is proposed regarding the measurement of water passing through outlets, the question of installing meters, at the head of each distributary, as has been done in some cases in the Punjab, is under consideration. This matter has passed the experimental stage and the construction of meters is being taken in hand. **Bihar and Orissa.**—Some progress has been made as regards the extension of long-term leased area on the Sone canals only.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER X.—Irrigation— *contd.*	**Central Provinces.**—Under existing conditions the sale of water by volume from Government works for the irrigation of rice, the only crop that is irrigated on any appreciable scale in the Province, is impracticable at present. **Assam.**—*Vide* remarks against item 52. **North-West Frontier Province.**—The local Administration considers that the time has not yet come for this to be attempted in this province. **Baluchistan.**—The sale of water by volume is in practice in this province, where water is the property of the individual and not of the Government. The water of a perennial stream is divided into a definite number of shares, and each share is owned by an individual or group of individuals. Revenue is collected in kind, *i.e.*, grain ; the *Zamindar* paying a certain fraction of his produce to Government. When Government develop these supplies, they normally adhere to the original basis of distribution and merely control the supply, in bulk ; the *Zamindars* themselves controlling the internal distribution.
54. Formation of Irrigation *Panchayats*. (Paragraph 278.)	**Bombay.**—The matter is under consideration. **Bengal.**—In Bengal, in every case one or more headmen are appointed and one of their duties is to see that water is distributed equitably to all. They are selected by the villagers themselves and are entitled to a certain amount of free irrigation. If there are complaints against a headman, the canal officer makes a local enquiry and the headman is changed if found desirable. The local Government accept the recommendation of the Commission regarding the formation of irrigation *panchayats* provided it is found satisfactory on trial, and instructions are being issued to try the system in a few selected cases. **United Provinces.**—A beginning was made last year in six canal divisions in associating selected village *panchayats* with divisional canal officers in dealing with the following matters pertaining to canal administration :— (a) *Preparation of osrabandis.** When an application for an *osrabandi* is received it is sent to the village *panchayat* to make the *osrabandi* within 30 days. If the *panchayat* complies and the resulting *osrabandi* is satisfactory, it is accepted and confirmed by the canal officers. If the *panchayat* fails, or if the result is obviously unjust, the canal officer proceeds independently according to the usual rules. (b) *Prevention of waste of water.* When waste of water occurs the *panchayat* is asked to investigate, fix responsibility and report to the canal officer within ten days. If it complies its findings are accepted unless there are clear reasons to the contrary. (c) *Construction of culverts.* In constructing culverts on village watercourses, divisional canal officers deal with *panchayats* instead of with individual cultivators. (d) *Complaints.* In cases of complaint against the assessment of water rates under the headings " wrong name " and " wrong crop ", *panchayats* are asked to report within fifteen days independently of the canal officials. Canal officers have been asked to report on the working of the system after a year.

* (An *osrabandi* is an agreement which fixes the hours or days in each week during which each village or several served by one watercourse shall have a right to the water).

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER X.—Irrigation— *contd.*	**Central Provinces.**—Irrigation *panchayats* are in existence and their efficiency is gradually improving. Provision has been made in the Irrigation Bill, which is before the Council, to give *panchayats* certain powers which, it is expected, will enable them to work more efficiently. **Assam.**—*Vide* remarks against item 52. **North-West Frontier Province.**—The local Administration considers that the time has not yet come for this to be attempted in this province. **Baluchistan.**—Attention is invited to the remarks against item 53 above.
55. Establishment of a special agency for Minor Irrigation Works. (Paragraph 279.)	**Bombay.**—Owing to the paucity of funds and the necessity for retrenchment of expenditure, the appointment of the Superintending Engineer, Minor Irrigation Works, has been abolished with effect from 1st April, 1930. A small establishment was retained thereafter for survey of such works but even that will have to be disbanded from 1st March, 1931. **Bengal.**—In Western Bengal and elsewhere, a good many small schemes, such as the silt clearance of tanks, etc., have been done by co-operative societies and as far as possible the Irrigation department helps the local people with advice. The Irrigation department is not, however, in a position to depute an officer especially for this purpose due to paucity of staff. The question of minor irrigation works will probably be taken up by the District Committees proposed by the Irrigation Department Committee, 1930, which was appointed by the local Government to report on the reorganisation, etc., of the department. **United Provinces.**—Hydro-electric development and the construction of the Sarda Canal have fully utilized the resources of the province in men and money for several years. Unfavourable financial conditions do not permit of the formation of the proposed project circle to investigate this and other matters, and a complete survey of all the resources of the province cannot be undertaken until money becomes more plentiful. Two development divisions have been formed in the western districts of the province in connexion with the hydro-electric scheme, and part of the work allotted to these divisions is the examination of the possibilities of small pumping schemes. To this extent only has it been possible to give effect to the Royal Commission's recommendations on this point. **Burma.**—The question of a special agency for construction and maintenance of minor irrigation works has not yet been dealt with, and is of no immediate practical importance during the present embargo on new expenditure from Provincial Revenues. **Bihar and Orissa.**—The Bihar and Orissa Minor Irrigation Works Act, 1922, is being revised. A draft amendment is under the consideration of Government. The temporary division known as the " Project division " is being maintained for the purpose of investigating such schemes (both irrigation and drainage) as are likely to be undertaken under the above Act. **Central Provinces.**—The establishment of a special agency is not considered necessary at present. **Assam.**—*Vide* remarks against item 52. **North-West Frontier Province.**—The establishment of a special agency is not considered necessary as all minor irrigation works will in future be constructed and maintained by the Irrigation department or under its advice. **Baluchistan.**—The suggestions of the Commission are being carried out. Subordinate officers of the Irrigation department have been detailed to tour from village to village to report briefly on the existing methods of irrigation

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER X.—Irrigation— *contd.*	in each village and how these could be improved. These reports will be consolidated by the Superintending Engineer, Irrigation, who, in consultation with the Political Agents, will draw up a priority list, after which detailed investigations and preparation of small projects will be put in hand. It is hoped to have a list of about 15 of these small projects, complete with designs and estimates, ready by September, 1931, for submission to the Government of India. It is proposed to ask for a special grant to enable the construction being started in 1932-33.
56. Pumping and Boring Operations and Tube Wells. (paragraph 280.)	**Madras.**—The Government consider it unnecessary at present to examine the question of increasing the powers of local authorities for the grant of loans for sinking wells for pumping operations, etc., until some definite cases of inconvenience under the existing rules are brought to their notice. There is little private enterprise in this Presidency to assist the ryots in sinking wells, and the Industries department, therefore, carries on pumping and boring operations on behalf of ryots with a view to tap sub-soil sources of water-supply for drinking and irrigation purposes. A moderate fee is charged towards hire and for the services of the subordinates. The Industrial Engineering Section has to its credit 673 sub-artesian springs and seven artesian springs, one or two of which are of appreciable magnitude. The results of boring in 1928-29 have been compiled. The result of 1929-30 are under compilation. A survey of sub-soil water-supply of Bellary *firka* was carried out in 1928-29. The results of the survey have been published. The question of utilization by District Board, Bellary, of the bore-holes put down by the Industrial Engineering Section is now under consideration. The Taluk Board, Bellary, has already utilized one of the bore-holes as a source of drinking water-supply. **Bombay.**—Owing to financial stringency, the boring activities have been suspended as one of the items of retrenchment. No action on the lines of the recommendation can, therefore, be taken at present. The Agricultural Engineer has reported upon 107 potential pumping sites on various rivers. **Bengal.**—These recommendations have been accepted in principle by the local Government. **United Provinces.**—The system of subsidising tube-well construction is still in force, but it has been decided that from April, 1931, in return for the services rendered by officers of the Government, zamindars should sell seed to Government in all cases where pumping plant of over 10,000 gallons capacity per hour are installed. During the year 17 large and 22 small tube-wells were completed and more than 100 projects are in hand. The construction of tube-wells by private agencies has made no progress. There is a growing demand for boring work in ordinary wells and progress in meeting the demand is well maintained. 1,543 wells were bored, of which no less than 1,137 proved successful. Economic conditions did not permit of much advance in tube-well construction. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. The Lift Irrigation Section has since been abolished. **Bihar and Orissa.**—The study of the economics of tube-well irrigation has not further advanced owing to the absence of a water-recording meter, which it has not been possible to purchase for want of funds. Similar is the situation with respect to rock-drilling plant for exploring the possibilities of sub-soil water-supply by boring in Chota Nagpur and other parts of the province with rocky substrata. The work of ordinary open type boring and tube-wells of different dimensions undertaken by the Department is expanding on the lines already indicated in the previous report. Records and definite charts are maintained of each successful boring with a view to build up records for a future systematic survey of sub-soil water-supplies.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER X.—Irrigation— *contd.*	
	Central Provinces.—No action has been taken during the year.
	Assam.—The possibility of using pumping plants for artificial regulation of water supply in the cultivation of *boro* paddy and for irrigating river-side high lands for the growth of cold weather crops, which are assuming greater importance, will shortly be investigated.
	Baluchistan.—Quite a large proportion of the irrigation in this Province is from *karezes**. An experiment for pumping water at the head of the *karezes* is being carried out. Oil engine pumping will probably prove too expensive to make this practicable. Boring operations have not proved successful. Tube wells for village drinking supply have proved successful in the two cases tried. The difficulty is to make the villagers take proper care of the plant. A large pumping set is being installed at Mallezai for pumping water for irrigation from the Pishin Lora perennial supply. A report on this scheme will be submitted after a full year's working.
	Delhi.—In the wells in which the supply of water is insufficient or where the water of the upper strata is salt, zamindars were advised to get these bored and several such wells have been bored. The movement is growing popular.
57. Ordinary Wells (paragraph 281).	**Madras.**—A special enquiry is under contemplation to enquire into the abandonment of wells in the Madakasira *taluk* of the Anantapur district.
	Bombay.—No action on the lines of the recommendation has so far been taken in the Presidency proper, while no action requires to be taken in Sind.
	Bengal.—The local Government accept these recommendations but consider that there is little scope for co-operative sinking of wells for irrigation purposes in Bengal.
	United Provinces.—The Agricultural Engineering Section of the Agricultural department continues to devote attention to the improvement of masonry wells, and 1,543 wells were bored during the year. The Co-operative department report the installation of about 30 Persian wheels. Four hundred wells owned by members of societies were bored and nearly 100 new wells were constructed. Two societies were formed for the joint construction of wells. The Registrar considers that there is considerable scope for societies of this kind, but the difficulties are that members sometimes cannot make up their minds as to the order of precedence in which they should take water and they have a feeling that common or joint property is apt to be neglected by all. The question of power pumps for raising water from ordinary wells is being looked into by the Agricultural Engineering Section.
	Assam.—This province is not concerned with this recommendation, *vide* remarks against item 52.
	North-West Frontier Province.—The local Irrigation Branch has so far had nothing to do with wells but any advice asked for will be freely given.
	Baluchistan.—The development of irrigation from ordinary wells will be considered in connection with the small village schemes referred to in item 55 above.

*NOTE.—*Kareze* is a system of irrigation used where sharp slopes make it possible to bring sub-soil water to the surface by horizontal shafts.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER X.—Irrigation— *contd.*	
	It is proposed to sink trial wells to ascertain the sub-soil level and to make recuperation tests to determine the quantities available. If satisfactory results are obtained, an attempt to introduce bullock *hurla* (Persian wheel) irrigation will be made, as it is considered that the running costs of oil engine pumps will be too expensive. **Delhi.**—Some of the irrigation wells were constructed through the help of *taccavi* (Government loan) grants and others through private enterprise. The number of irrigation wells is satisfactorily increasing and during the year under report no less than 214 new wells were constructed.
58. Establishment of close relations between Agricultural and Irrigation Departments (Paragraph 283).	**Madras.**—Before considering any irrigation scheme, the advice of the Agricultural department is sought for on the suitability of the tract and also on the kinds of crops that could be grown with profit. **Bombay.**—The Agricultural department in the Presidency is co-operating with the Irrigation department in the conduct of short courses in agriculture held by that Department. In Sind, the closest relations exist between the Agricultural and Irrigation departments. The Chief Agricultural Officer is a member of the Lloyd Barrage Standing Committee, and as his headquarters are at Karachi, he is in intimate touch with the senior officers of the Irrigation department. **Bengal.**—The local Government accept in principle the recommendation regarding institution of short courses of training in agriculture and will consider it when the Agricultural Institute at Dacca materialises. **United Provinces.**—In accordance with the arrangements outlined in the last report four officers of the Irrigation department were sent to the Sugarcane Research Station, Shahjahanpur, to study cane sowing methods and problems connected therewith concerning both the Irrigation and Agricultural departments. Three irrigation officers studied at Shahjahanpur green manuring processes adopted there and three other officers studied *rabi* sowing operations. A course of lectures on irrigation subjects was delivered to students of the Agricultural College, Cawnpore, by the Professor of (Irrigation) Engineering at the Thomason College, Roorkee, and Research Officer, Irrigation Branch. The Irrigation and Agricultural departments combined with the civil revenue officers in issuing improved seeds in the areas commanded by the Sarda Canal. The results on the whole were successful. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. Relations have been intensified by Irrigation Officers being deputed to attend the Rural Economy Course at the Agricultural College and the inclusion of lectures on irrigation policy at this course. **Burma.**—The local Government have decided that the Director of Agriculture should consult the Irrigation department before he finally selects any area, for the establishment or extension of an experimental or seed farm, which is irrigated or is likely to be irrigated. The Chief Engineer, Public Works Department (Irrigation), has also been instructed to consult the Agricultural department before an irrigation project is prepared and also to send to the Director of Agriculture a copy of any order directing any work to be put in hand which may result in any considerable extension of irrigation, or directing any work to be abandoned which may result in any considerable contraction of the irrigated area. The local Government have decided that the officers of the Agricultural department who attend the courses of instruction at the Provincial Training College, Meiktila, should also attend the lectures given there on irrigation and that the Director of Agriculture should arrange with the Principal of the provincial Training College for lectures on agriculture to be delivered which irrigation officers and others attending courses at the college may attend.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER X.—Irrigation— *contd.*	
	Central Provinces.—The Agricultural department is consulted before a new project is undertaken. The programmes for demonstration and experimental work of the Agricultural department are prepared to meet the requirements of, and in consultation with, the Irrigation department. Plots are also opened in commanded areas to demonstrate the growing of irrigated crops. A combined class for officers and subordinates of the two departments was held in October, 1930. It was not successful and it is proposed to hold a similar class in future in every second year. More intensive work has been undertaken in Bilaspur under recently opened works. **Assam.**—This province is not concerned, *vide* remarks against item 52. **North-West Frontier Province.**—Close contact is being maintained. The Agricultural Officer was consulted during the year on several subjects by the Irrigation department and one officer of the latter department was put on special duty for a short time to learn improved farming methods from the Agricultural department. **Baluchistan.**—Both departments are comparatively new in this Province. Subject to funds being available there is a large field for development and when this development takes place, both departments will work in close co-operation. **Delhi.**—The Agricultural department's representative is a member of the Canal Advisory Committee, and that department is consulted in all cases of special damage to crops, *e.g.*, the attack of the sugarcane crop by the "pyrilla" insect in the *Kharif* of 1930.
59. Establishment of Irrigation Advisory Committees (paragraph 284).	**Madras.**—An Irrigation Development Board has been constituted to report to Government on new irrigation projects and to be responsible for watching and furthering the development of irrigation under schemes which have been completed and are in operation. The Board will consist of the following members :— (1) the Commissioner of Land Revenue, (2) the Commissioner of Land Revenue and Settlement, (3) the Chief Engineer for Irrigation, (4) the Director of Agriculture, and (5) the Registrar of Co-operative Societies. **Bombay.**—The matter is under consideration. **Bengal.**—The Irrigation Department Committee appointed by the local Government in 1930, recommended the formation of "District Committees" and it is expected that when effect is given to the recommendations of the Committee, the District Committees will serve the purpose of Advisory Committees. If anything further is found to be required, there could be an Advisory Committee for each canal. **United Provinces.**—It has been decided to give a trial to a system of advisory committees to deal with complaints regarding irrigation matters in three selected canal divisions. The committees are to consist of the local division canal officers and non-officials. Rules to govern their working are under consideration and it is hoped that the system will be in operation shortly. **Bihar and Orissa.**—The term of the Advisory Committee for the Superintending Engineer, Sone Circle, having expired during the year, the question of further extension is under consideration. **Central Provinces.**—There is a Standing Committee of the Provincial Legislative Council. No further Committee is considered necessary.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER X.—Irrigation— *contd.*	
	Assam.—This province is not concerned. *Vide* remarks against item 52.
	North-West Frontier Province.—A Canal Advisory Committee for the Upper Swat and Lower Swat and Kabul River Canals has been established and is doing useful work.
	Delhi.—A Canal Advisory Committee exists in the Delhi Division, Western Jumna Canal.
60. Research on Irrigation problems (paragraph 287).	**Madras.**—This Government consider that it is not at present necessary to establish a research station to study the water requirements of crops.
	Bombay.—The recommendation that more attention should be paid to research on irrigation problems has already been adopted. In addition to the great irrigation research work being done by the Special Irrigation Division and the Irrigation Development and Research Circle in the Deccan, a Research Division has been opened in Sind for carrying out research work in connection with the Lloyd Barrage project. Recently a committee consisting of Irrigation and Agricultural officers, presided over by the Commissioner in Sind has been constituted, to ensure that there should be close co-ordination between the Agricultural and Irrigation departments as regards the work carried out at their various research stations ; to indicate the lines on which further investigation of the problems which confront the two departments should be conducted, and to allot to the two departments work to be carried out at their research stations in order that there should be no avoidable duplication or overlapping of work. The formation of the Deccan Canal Area is under consideration.
	Bengal.—The "Irrigation Department Committee, 1930", referred to before, have dealt with this subject in its report and when effect is given to the Committee's recommendations this point will receive full consideration.
	United Provinces.—The Professor of Civil Engineering, Thomason College, Roorkee, continued to perform the duties of Irrigation Research Officer in addition to his normal work, and was provided with an assistant and a small staff for research work. He visited England in 1929 and studied research methods there, visiting the National Physical Laboratory, the Building Materials Laboratory and the Hydraulic Laboratory of the Imperial College of Technology and Science. He established contact with the Directors and workers at those institutes. As a result of his visit, he reported that great progress in research was not possible without very considerable expenditure on staff and equipment. Progress must, therefore, in the prevailing financial conditions necessarily be slow. This officer's work on silt transportation was published in January 1930, in the form of a paper, which was read and discussed at the Institution of Civil Engineers, Westminster. The discussion brought out the views of competent engineers and the problem of silt transportation has been definitely advanced. Particular attention has been paid to methods of precise measurement of water. Full size experimental flume meters were constructed on distributaries of the Ganges Canal and experimental broad crests were added to falls on the Sarda Canal. This work will make it possible to ascertain with precision actual channel losses from which it can be decided whether the introduction of lining in certain reaches would be justified. The Research Officer, in conjunction with a Deputy Director of Agriculture, prepared a programme of research on crop requirements, which is to be carried out at Meerut. Contact is thus being maintained between the Irrigation and Agricultural departments in research matters. Fuller collaboration cannot be attained until funds permit of the formation of a Research Division, of which one sub-division would be devoted entirely to canal agricultural problems.
	Punjab.—The action taken on this recommendation has already been mentioned in the previous report. An application for a grant-in-aid for the establishment of an Agricultural Research Station on the water requirements of crops and other connected problems, has been made to the Imperial Council of Agricultural Research.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER X.—Irrigation— *contd.*	
	Assam.—This province is not concerned, *vide* remarks against item 52. **North-West Frontier Province.**—There are not at present sufficient officers to permit of this work being undertaken. **Baluchistan.**—The local Administration has had no opportunity of carrying out any research works.
61. Preparation of Drainage Maps. (Paragraph 289.)	**Madras.**—The recommendations of the Commission in regard to this question are based on Mr. Howard's report "Crop Production in India" which has little application to the conditions in this Presidency. The Government, therefore, consider that it is unnecessary to undertake the general preparation of drainage maps of existing irrigation systems in this Presidency. **Bombay.**—The matter is under consideration. **Bengal.**—The question of preparing drainage maps has been very fully dealt with by the "Irrigation Department Committee, 1930". The Committee have recommended the appointment of a special drainage officer of Superintending Engineer's status and the undertaking of a complete hydraulic survey with a contoured map of Central Bengal. They have also proposed that hydraulic data should be collected for all important drainage lines in Bengal. A good many drainage maps already exist for the lower portion of the province but a good deal remains to be done. This work will be completed when the department is expanded. **United Provinces.**—Financial conditions did not permit of a drainage survey, outside canal irrigated tracts, being undertaken nor is there any hope that this matter will receive attention till financial conditions improve. The report on this recommendation last year did not make it clear that the systematic drainage of canal irrigated lands has for years received the most careful attention. In connexion with the Sarda Canal alone, 899 miles of drains have been constructed and 6,202 acres of land previously permanently submerged have been drained and made available for cultivation. **Bihar and Orissa.**—This work has not yet been taken up. **Assam.**—As a result of the floods of 1929, the possibility of creating a waterways division which would collect material regarding the conditions leading to excessive floods, and deal with the constantly recurring problems concerning the courses of rivers, protective embankments and reclamation of swamps, is under examination, but has been indefinitely postponed owing to the refusal of the Legislative Council to entertain an Embankments Bill. **North-West Frontier Province.**—Drainage maps have been made and a considerable amount of work has been done on the construction of drains in areas threatened with water-logging. **Baluchistan.**—The local Administration does not consider that there is any necessity for this at present.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER X.—Irrigation— *contd.*	
62. Irrigation in Sind. (Paragraphs 290—291.)	**Bombay.**—(*a*) The possibility of developing irrigation in parts of Sind not commanded by the Sukkur Barrage Project has not been lost sight of so far as the remodelling of the existing canals, which will be adversely affected by the Lloyd Barrage scheme, is concerned. The remodelling work has been taken in hand and will be steadily pursued until all the canals are improved in accordance with the undertaking given to the zamindars. It is also under contemplation to undertake new schemes for the improvement and extension of irrigation in non-Barrage areas. But in view of the financial conditions this will be done after the completion of the remodelling schemes which are more urgently required to be carried out. (*b*) The recommendation regarding the appointment of an agricultural officer to assist the chief revenue and irrigational officers of the Sukkur Barrage Project, has been accepted. Government have appointed a Chief Agricultural Officer in Sind to direct and control the scientific and practical agricultural work to be undertaken in that province, mainly in connection with the problems associated with perennial irrigation. This officer has been made independent of the control of the Director of Agriculture in financial and administrative matters and made subordinate to the Commissioner in Sind.
63. Irrigation in Bengal. (Paragraph 292.)	**Bengal.**—The various recommendations of the Commission have been fully considered by the Irrigation Department Committee, 1930, and they have recommended, *inter alia*, (*i*) the reorganisation and expansion of this department, (*ii*) creation of a special drainage branch under a Drainage Superintending Engineer, together with collection of hydraulic data and preparation of contoured maps, and (*iii*) the creation of a Waterways Trust to administer the 20,000 miles of major waterways in the province.
64. Hydro-electric development. (Paragraph 295.)	**Madras.**—A scheme known as the Pykara scheme for generating electricity is slowly materializing and it is hoped that, when it is completed, irrigation by electric pumping will become popular. **Bombay.**—The local Government consider that no action is called for at present. **Bengal.**—In 1921, a Committee was appointed by the local Government to consider the measures to be taken to conduct and control the work of Hydro-electric survey in Bengal and the report of the Committee was duly forwarded to the Government of India in September, 1924. Since then no action has been taken in this direction. **United Provinces.**—Three electric power stations, at Bahadrabad, Bhola and Sumera, have been completed and are now in running order. A vast transmission system interlinking the local systems served by these three stations is now being completed and over 700 miles of high tension line are now in service in the seven western districts of the province. Some fifty towns and large villages, having a population of 5,000 and over, are now being supplied with energy and about sixteen towns will be linked in during January, 1931. The Ramganga weir pumping station and canals are now complete and 200 cusecs are being pumped from this river for additional irrigation in the Bijnor and Moradabad districts. One hundred cusecs are also being pumped from the Kali Nadi in the Bulandshahr district for additional irrigation on the Ganges Canal. Additional branch lines are being built to supply consumers in rural areas with electric power, subject to certain rules and conditions regarding minimum consumption guarantees. It is hoped that the whole scheme in its present phase will be complete and in operation by the end of February, 1931.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER X.—Irrigation— *concld.*	
	Projects for the electrification of agricultural farms in the hydro-electric grid area have been sanctioned and a proposal to construct Government tube wells in this area is under consideration. The use of hydro-electric power for industrial purposes in the grid area is still mainly confined to flour mills and pumping, but there are signs of increased interest, particularly in those areas where the scheme has been longest in operation. Schemes for giving a grant to the Dayal Bagh Industrial Institute, Agra, for experiments in introducing power looms for cottage weavers and installing a few power looms for experimental purposes and for demonstration at the Bulandshahr school, are being framed. The Metal Working School, Aligarh, is also being equipped with electrical power and an electro-plating plant is being installed for purposes of demonstration. Hydro-electric energy has decentralized power and rendered it possible for cottage industries to be organised efficiently. **Assam.**—A survey was undertaken in 1923, but has little bearing upon agricultural problems in Assam. **North-West Frontier Province.—Nothing to add to the previous report.**
CHAPTER XI.—Communications and Marketing.	
65. Constitution of Road Boards. (Paragraph 305.)	**Bombay.**—A Road Board has been appointed as an advisory body. The question of widening the functions of the Board is under consideration. **United Provinces.**—Since the last report was written, the Secretary to Government, United Provinces, Local Self-Government Department, has been made a member of the Board of Communications. The proposal regarding the appointment of a whole-time Secretary to the Board of Communications is still under consideration. **Bihar and Orissa.**—Since 1929, a Road Board with advisory functions has been constituted. It is considered premature at this stage to invest this Board with financial powers similar to those enjoyed by the Communications Board of the Punjab. **Assam.**—A Road Board, the non-official members of which are elected by the Legislative Council, was created in 1926 and is now functioning. Only advisory duties have been allocated to this Board, and the conveyance to it of administrative powers has not been considered. The Board drew up a scheme of arterial roads, which will gradually become the responsibility of Government. It was considered only proper that, when the local boards were relieved of the cost of maintaining such roads, their grants from Government should be reduced accordingly. As the distribution of roads. now classed as main roads, between the various local boards differs widely, any other arrangement would have resulted in the accrual of undue windfalls to particular boards. The allotment to the boards of funds becoming free for communications other than the arterial improvements must, therefore, proceed on other lines than free gift to those bodies whose roads are being taken over. An addition of Rs. 15,000 was made in 1929-30 to the ordinary communications grant of local boards (reduced by Rs. 25,000 as stated above) and an addition of Rs. 50,000 in 1930-31. In 1929, the Road Board recommended that the improvement of the main roads should be financed by a loan so calculated that the annual charges for repayment with interest should not exceed a total of Rs. 5 lakhs, and this was accepted by the Council. The list of roads prepared by the Board has been again revised and approved by Government. Work has begun on many roads.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XI.—Communications and Marketing—*contd.*	
	Baluchistan.—A Road Board was suggested for this province in 1927, but since the entire system of roads, other than those within municipal or cantonment limits, are under the control of a single authority, *viz.*, the official who performs the dual duties of Secretary, Public Works Department, to the A. G. G. in Baluchistan, and Chief Engineer to the G. O. C.-in-Chief, Western Command, it was decided with the consent of the Government of India that such an institution was not required for the province.
66. Development of Subsidiary Communications. (Paragraphs 305—307.)	**Bombay.**—A programme has been prepared of works to be financed from the petrol tax funds during the years 1930-31 to 1934-35. This programme includes works of Class I and Class II importance, as the petrol tax is to be used only for these types of roads. So far as village roads are concerned, it is not possible to allot funds from this source as also from provincial revenues on account of the financial stringency. The question of constructing roads necessitated by the construction of the Barrage and the Deccan Canals is under consideration. **Bengal.**—The provincial Road Board considered this matter and prepared a five-year programme of road work. The grant from the Central Road Fund for the current year has been received and the Public Works Department have already commenced work. Estimates for district board roads included in the programme have been called for. **United Provinces.**—During the period under report, 75 miles of local roads have been provincialised and taken over by the Public Works Department for maintenance. In addition to this, it has been decided to provincialise the 18-mile Roorkee-Hardwar local unmetalled road and the 41-mile Meerut-Bulandshahr road. The estimated cost of metalling the first is Rs. 3,29,571 and of re-conditioning the second Rs. 4,69,517. The expenditure will be met from the provincial share of the Road Development Fund (Petrol Cess). Collection of material for both these works has commenced. A list is maintained of local roads which have been approved by Government for provincialisation. The order in which they will be provincialised will be determined by their relative importance as public highways. **Bihar and Orissa.**—The desirability of paying special attention to subsidiary communications is fully realized by the local Government. With a view to developing these communications, a provincial tax on motor vehicles has recently been levied and the roads in the province have been reclassified by sub-committees of the Provincial Road Board. It is expected that a development programme will shortly be drawn up. **Assam.**—In accordance with general policy, maintenance and improvement of subsidiary communications has been left to the authority of the local bodies. Endeavour is made to provide assistance for the purpose as funds are available. A sum of Rs. 80,867 was provided in the budget of 1929-30 on account of village roads, and again of Rs. 20,000 in 1930-31. The disastrous floods of 1929 and subsequent financial depression compelled the diversion of most of these funds to other purposes. A handicap to the promotion of village communications on the lines suggested by the Commission lies in the general universal distaste among the races of the province for earthwork. After the floods of 1929, money was sanctioned for relief work, but only in one sub-division was there any considerable response to the call for labour. An additional local rate is levied on land under tea cultivation under section 3 of the Local Rates Regulation introduced by amendment in the Reformed Council. The proceeds are credited to a separate "Tea Rates Road Fund" for the improvement of road communications in the districts from which the increased rates are raised.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XI.—Communications and Marketing—*contd.*	
	Baluchistan.—Up to the present, efforts have been concentrated on improving the main arteries and very considerable progress has been made particularly in the improvement of the Loralai-Mekhtar (branch to Musakhel)-Barkhan Road and of the Loralai-Duki-Gumbaz-Hosri-Kohlu-Barkhan Road. The completion of these roads have opened up communications to a number of important villages. Branch roads have in certain cases being constructed by villagers, particularly about Killa-Saifulla. The construction of roads to Gulkach, Shaighaloo, Ahmedi Durga, Murga Faquirzai, and Maratangi Gwal, have recently been completed or nearly so and will have, it is hoped, a considerable effect in developing the country. The further development of branch roads is being explored.
67. Establishment of Regulated Markets (paragraphs 329—338).	**Madras.**—A Bill for the establishment of regulated markets is under scrutiny. Sanction of the Government of India will be applied for soon and it is hoped to introduce it in the Legislative Council as soon as it is received. **Bombay.**—In the Presidency, a regulated Cotton Market has now been established at Dhulia and an effort will be made to start a few more in other districts. No immediate action regarding other crops seems possible. In Sind, no regulated markets have yet been established. The matter is, however, receiving the attention of the Chief Agricultural Officer. **Bengal.**—It might be quite feasible to give effect to the recommendations about setting up "controlled markets" if the areas selected were those in which there are no markets, such as newly reclaimed tracts in the hills or in the Sundarbans; but elsewhere, *i.e.*, throughout the greater part of Bengal, the vested interests of the owners of existing markets would be a most serious obstacle. It seems that if a new controlled market were established in a mufassal town two things might happen—either the new market would fail to draw away custom from existing markets and the public money spent on establishing it would be wasted; or, custom might desert the existing private markets and they would have to be closed. In the latter contingency, it seems only fair that some compensation should be paid to the owners. In order to find out how this difficulty is dealt with elsewhere, a reference may be made to section 17 of the Bombay Act which provides for the extinction, apparently without compensation, of privately owned markets in places where controlled markets are established. This looks like sheer confiscation; and if similar proposals were made in Bengal, a storm of opposition from market owners would at once be raised. In the circumstances, it seems doubtful whether the recommendation can be given effect to. **United Provinces.**—Nothing has been done, as it has not been possible, on account of financial stringency, to appoint a marketing officer. **Burma.**—No steps have been taken pending publication of the report of the Rice and Paddy Trade Enquiry Committee. **Assam.**—The Municipal Act gives power to a municipal board to frame bye-laws providing for the inspection and regulation of markets and exhibition of a price list thereat, for prescribing the standard weights and measures to be used in the municipality and for the inspection of the markets. Local boards are given power under the Local Self-Government Act to provide for the establishment and maintenance of bazaars, and to prescribe the weights and measures to be used in such bazaars. No practical use is made of these powers for the purpose of insisting on fair trade, and no regular market committees are in existence. Provincial legislation would be necessary in order to establish markets of the nature contemplated by the Commission, as the existing law has been mainly drafted for the purpose of securing

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XI.—Communications and Marketing—*contd.*	
	proper sanitation. There are, however, very few large wholesale marts in the province and a great deal of the business in purchase of staple crops is done by commission agents outside the marts. There is no port or centre of brokerage for staple crops within the province. With the growth of railway and road communications, the size and comparative importance of markets are rapidly changing. The local Government are not in a position to contemplate the establishment of markets on modern lines without an economic study of the province which has not yet been attempted. **Baluchistan.**—No action has yet been taken.
68. Efforts to secure improved quality from producers with special reference to encouragement of Co-operative Sale Societies (paragraphs 340—342).	**Madras.**—In certain areas, efforts are being made to obtain improved qualities of cotton seeds. An agricultural demonstrator lent by the Agricultural Department has been appointed for a period of two years commencing from 1st November, 1929. He supervises the cultivation of these seeds by co-operative seed societies and arranges for the sale of the cotton through the sale society at Tiruppur. **Bombay.**—In the Presidency proper, the Agricultural Department is rendering all possible help to the co-operative cotton sale societies in the sale of their produce as well as in grading cotton. Necessary help is also rendered to sale societies dealing with other produce, *e.g.*, *gur*, mango, etc. In Sind, the matter is under the consideration of the Chief Agricultural Officer. **United Provinces.**—The Co-operative department has organised a sugarcane sale union at Ghugli in the Gorakhpur district which has completed its first year of existence. The result has been the removal, to a very great extent, of the chief troubles of the local sugarcane growers, *viz.*, improper weighments, vexatious delays in settling accounts and forced charity contributions. The local contractors, many of whom are landlords, do not regard this union with favour, but it has succeeded in establishing itself. Whether it will be able to expand its work appreciably or not is difficult to say. It has sixteen affiliated societies and supplied 53,000 maunds of cane. It earned a profit of Rs. 654. Two serious defects manifested themselves. One was that societies depend too much on the paid staff lent to the union and did not trouble to keep their accounts. The other is that, though nearly Rs. 20,000 was paid to members for cane supplied, only a few hundred rupees found their way back to the village credit societies in repayment of the loans taken from them. Further, out of Rs. 4,000 advanced for cane cultivation, a small sum became overdue. The eradication of these defects is a matter of education, but unless these tendencies are checked at the outset, they will develop and in time become a serious menace. The question of undertaking the sale of potatoes at Farrukhabad on a co-operative basis was examined, but had to be dropped as potatoes are a very perishable commodity. Experiments to discover the optimum conditions for the retting of hemp are in progress at the Harcourt Butler Technological Institute, Cawnpore, in collaboration with the Co-operative department. **Central Provinces.**—Four more agricultural associations have been registered during the year and their number has now increased to 25. **Assam.**—In the absence of a properly qualified staff, the Co-operative department has been unable to undertake the organization of non-credit societies. The most important attempt at a sale society was that of the

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
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	Nowgong Co-operative Jute-Supply and Sale Society which was unfortunately started without a solid foundation in business experience and early collapsed. With the separation of the department from that of Agriculture, it is hoped that the conditions of the co-operative movement will be entirely reviewed and improved ; but hitherto financial stringency has prevented an increase in the staff. **Baluchistan.**—No action has yet been taken. **Delhi.**—In the present stage of the co-operative movement, the sale and purchase business is not considered possible.
69. Auction Sales by Agricultural Departments (paragraph 343).	**Madras.**—In the case of cotton, when an improved strain is given out to ryots, the *kapas* of the ryots are ginned at a special ginnery, the lint is sold in auction to the highest bidder and the seeds are distributed to the ryots, all under the supervision of departmental officers. **Bombay.**—In the Presidency proper, the Agricultural Department is endeavouring to secure an adequate premium for superior varieties of cottons introduced in the several cotton tracts. In Sind, this recommendation will receive consideration after the advent of perennial irrigation. **Bengal.**—The co-operation of private agencies and co-operative societies has already been secured by the Agricultural Department to achieve the object in view. **United Provinces.**—No action has yet been taken. **Punjab.**—Auction sales by Agricultural Department are restricted to one circle and are confined to cotton. **Assam.**—The province is not sufficiently advanced for these recommendations to have any practical application. **Baluchistan.**—No action has yet been taken.
70. Experiments with Containers (paragraph 345).	**Madras.**—A scheme has been submitted to the Imperial Council of Agricultural Research asking for a grant to establish a station and carry out research on fruit. **Bombay.**—In the Presidency proper, as a result of the Mango Enquiry Committee's recommendation, observations were made to find out suitable and better types of packing material for sending mangoes from the Konkan to Bombay. A leaflet, explaining the advantages of packing mangoes in boxes over bamboo baskets, has been issued by the Agricultural Department for free distribution. No action has been taken in Sind. **United Provinces.**—No action has yet been taken. **Punjab.**—With a view to improving the methods of marketing Punjab fruits, model packing cases for the despatch of graded fruits to markets have been supplied to the Fruit Growing Association so that they may be copied.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XI.—Communications and Marketing—*contd.*	
	Assam.—*Vide* remarks against item 69.
	Baluchistan.—No action has yet been taken.
71. Market Surveys (paragraph 347).	**Madras.**—An agricultural officer of the grade of a deputy director has been lent to the Co-operative department to study cotton markets. It is the intention of the Government that the work now being taken up with regard to cotton should be extended to other products.
	Bombay.—To formulate a policy for the improvement of marketing and to undertake a survey on the lines laid down in paragraph 347 of the Report are considered two of the most important problems to be tackled by the Agricultural Department. The first step in this direction is the appointment of an expert marketing officer on the staff of that department. Proposals to this effect were submitted to Government but owing to financial stringency no action has been possible. Several surveys connected with the marketing of cotton up-country have been carried out with the aid of funds by the Indian Central Cotton Committee.
	United Provinces.—No action has been taken, as it has not been found possible to appoint a marketing officer.
	Punjab.—The action taken on this recommendation has already been mentioned in the previous report.
	The local Board of Economic Enquiry has conducted certain surveys into the marketing of the wheat crop.
	Burma.—The Director of Agriculture's proposal was to put one of the existing staff on special duty for a limited period in order to ascertain whether the conditions in this province are such as to warrant the carrying out of the recommendation as a permanent measure. It has been decided that the action to be taken on this proposal should await the results of the investigation regarding establishment of regulated markets, referred to in item 67 above, and the report of the Committee appointed to enquire into the rice and paddy trade in Burma.
	Central Provinces.—Preliminary surveys of grain markets and the marketing of oranges have been made.
	Assam.—*Vide* remarks against item 69.
72. Appointment of expert Marketing Officers (paragraph 348).	**Bombay.**—As indicated against item 71, the question of the appointment of a marketing officer could not be proceeded with owing to financial stringency.
	United Provinces.—Lack of funds precluded the appointment of a marketing officer.
	Punjab.—The action taken on this recommendation has already been mentioned in the previous report. No marketing officer has yet been appointed.
	Burma.—A Deputy Director of Agriculture was sent to Berar for a month in 1929 to study the cotton markets there. He has written a report on the regulated markets of Berar and the question whether the marketing

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
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	of agricultural produce in Burma can be improved by the establishment of similar markets. The report will be printed and copies supplied to District Councils, Municipal and Town Committees, and to Deputy Commissioners, Subdivisional Officers and Township Officers. Copies will also be made available for sale to the public. The Berar markets were not, it is noted, created by legislative action but grew up gradually to meet the needs of the cotton trade. The local Government consider that in the different circumstances of Burma, any immediate creation of such markets is out of the question and that the most hopeful field for investigation of the possibilities of such creation is in such places as Pakokku and Magwe where cultivators habitually bring produce for sale. The Director of Agriculture will submit proposals for supplying the officer referred to with an extra assistant in order that he may undertake such an investigation during the next marketing season. **Central Provinces.**—A Deputy Director of Agriculture for Economics and Marketing has been appointed. **Assam.**—*Vide* remarks against item 69.
CHAPTER XII.—The Finance of Agriculture.	
73. Limitation on period of usufructuary Mortgages (paragraph 353).	**Madras.**—The local Agricultural Advisory Committee considered that no action was necessary on this recommendation. **United Provinces.**—No action has yet been taken. **Burma.**—The local Government have decided that legislation such as is suggested in this recommendation need not be undertaken at present. **Bihar and Orissa.**—*Vide* remarks against item No. 75 below. **Central Provinces.**—No action has yet been taken. **Assam.**—The Goalpara Tenancy Act, I of 1929, forbids an occupancy tenant to enter into any form of usufructuary mortgages except a complete usufructuary mortgage, which may be for any period not exceeding nine years, and may be redeemed before the expiry of the period. The Assam Banking Enquiry Committee, 1930, reviewed the position and, while observing that the bulk of indebtedness is secured otherwise than on the land, recommended that this limitation should be applied in any future tenancy legislation. As, however, the Legislative Council has not yet passed a Record of Rights Bill for the district of Sylhet, where alone tenancy problems are now urgent, legislation in the matter is not of immediate importance. **North-West Frontier Province.**—No action has been taken but legislation enacted in the Punjab is generally extended to this province. **Delhi.**—The Alienation of Land Act provides a limitation of 20 years on the period of usufructuary mortgages by *bona fide* agriculturists to non-agriculturists.
74. Removal of restriction on operation of Punjab Redemption of Mortgages Act (paragraph 354). (*Special to the Punjab.*)	**Punjab.**—No remarks have been received from the local Government.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XII.—The Finance of Agriculture—*contd.*	
75. Enactment of Legislation in regard to redemption of Mortgages in provinces other than the Punjab (paragraph 354).	**Madras.**—The local Agricultural Advisory Committee considered that no action was necessary on this recommendation. **United Provinces.**—No action has yet been taken. **Bihar and Orissa.**—In the last progress report, it was stated that the general tendency of tenancy law in the province had committed the local Government to restrict the right of alienation, but they proposed to sound the landlords and tenants' parties further on the question of legislation for the redemption of mortgages in connection with the revision of the Bengal Tenancy Act, which was then in progress. Since then the Government have been compelled to abandon the revision of that Act and there will be no further tenancy legislation under the present constitution. The local Government, are, therefore, unable to pursue this question further at present. **Central Provinces.**—No action has yet been taken. **Assam.**—*Vide* remarks against item 73. **North-West Frontier Province.**—*Vide* remarks against item 73.
76. Desirability of extension of Principle of Statutory Restriction on Alienation of Land (paragraph 355).	**United Provinces.**—The Bundelkhand Alienation of Land (Amendment) Act, 1920, referred to in the last report, received the assent of the Governor General in Council on August 30, 1929. **Central Provinces.**—The local Government do not consider any action necessary except in case of backward and jungle tribes for which provision already exists in the Central Provinces Land Alienation Act and section 66 of the Berar Land Revenue Code, 1928. **Assam.**—Although there is no Land Alienation Act in Assam, the local Government have realised the necessity of preventing unfettered transfer of land by agriculturists to non-agriculturists in areas where there is danger of the people being victimized. Generally speaking, the problem is not very serious in the province. For instance, at the recent resettlement of the Sibsagar district, where figures were collected for the whole area, it was found that less than 1 per cent. of the land was in the hands of Marwaris and other traders so that their grip on the land could not be said to be great. A clause has been inserted in all periodic *pattas* issued since the year 1917 providing that land shall not be transferred by an agriculturist to a non-agriculturist without the permission of the Deputy Commissioner. As this forms one of the conditions of the lease, its breach renders the lease liable to cancellation. The position was, however, reviewed in 1928 and it was decided that as there had been no marked increase in the areas held by traders, even where the clause had not been enforced in practice, the clause should not be enforced in future without the consent of Government, which would only be given in respect of particular areas or particular classes of lease holders, if Government were satisfied that special danger existed of the land passing on a large scale into the hands of non-cultivating classes. The policy of Government was endorsed by the majority of the Assam Banking Enquiry Committee, 1930. The clause thus remains as a useful reserve power to be enforced if occasion arises. An instance of this enforcement is to be found in the case of the Kacharis of North Kamrup, who in the year 1929 were not permitted to transfer their lands to immigrants from outside the province, a special coloured form of lease being issued to give effect to these orders. This action was taken to safeguard the interest of the Kacharis themselves. The above remarks cover the implications of the recommendation so far as Assam is concerned and the progress made or contemplated. As regards the estimate of cost, no expenditure has been incurred by Government in pursuance of the policy described above.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XII.—The Finance of Agriculture—*contd.*	
	North-West Frontier Province.—*Vide* remarks against item 73.
77. Enquiry into Expropriation of Hereditary Class (paragraph 355).	**Bengal.**—It has since been decided by the local Government that it will not be possible for the Census Department to undertake the enquiry and that it will be done in connection with district settlement operations. It appears from settlement reports relating to portions of the districts of Burdwan and Malda that, in Burdwan, the majority of transfers were between cultivators while, in Malda, most of the transfers were from cultivators to money-lenders, many of whom were the landlords of the former. The question of the desirability of imposing statutory restrictions on alienation of land has been dealt with in the previous report.
	United Provinces.—*Vide* remarks against item No. 76 above.
	Bihar and Orissa.—On further examination, the local Government have decided that a general enquiry to ascertain the extent to which actual cultivating classes are being expropriated by non-cultivators is not feasible. It is only by dealing with the facts of every holding in a village that the extent and character of transfers can be ascertained. Such an investigation can only be made during settlement operations, when a complete record of transfers by sale or mortgage is prepared. If and when further revision settlements are carried out in this province, Government will be prepared to make the enquiry. The only alternative would be to make a limited enquiry in selected areas. Under the revenue system of this province, the local Government have no staff for the purpose and they do not think that the limited results to be obtained from the special enquiry would be sufficiently reliable or sufficiently typical to warrant the expenditure necessary for a special staff. They have decided, therefore, not to make such an enquiry until revisional settlements are undertaken.
	Central Provinces.—Instructions have been issued to conduct enquiries at the time of revenue settlements.
	Assam.—The matter was considered by the Assam Banking Enquiry Committee, 1930. Admitting that the extent to which non-agriculturists are obtaining possession of the land is comparatively small, they considered the process represents a danger for the future, but were unable to make any proposal as to how it might be checked save by growing education.
	North-West Frontier Province.—The Punjab Land Alienation Act is in force in the province. This Act has been successful in preventing wholesale alienation and the existing tenancy Acts protect the cultivating classes.
78. Removal of difficulties in the way of Landlords investing Capital in their Lands (paragraph 358).	**Madras.**—A clear and definite provision on the lines of section 42 of the Agra Tenancy Act has been included in an amending Bill of the Madras Estates Land Act which it is proposed to introduce in the Legislative Council shortly.
	Central Provinces.—Under section 98 of the Central Provinces Tenancy Act, a landlord can acquire tenancy land for some reasonable and sufficient purpose. The local Government consider that no further provision is necessary.
	Assam.—The problem does not apply to the temporarily-settled districts of the province, where large landlords are practically unknown, nor to most of the Sylhet district where the proprietors are in the main small

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XII.—The Finance of Agriculture—*contd.*	
	cultivators. In the Goalpara district, there have until recently been large areas of waste land and no question has arisen of introducing special measures to enable landlords to acquire home farms, nor has it been represented that the existing systems of tenure of tenancy laws deter landlords from investing capital in the improvement of their land. In the Goalpara Tenancy Act, I of 1929, provision has been made to establish the rights of the landlord, as well as the tenant, to make improvements and to ensure their proper registration. **North-West Frontier Province.**—No action has been taken but legislation enacted in the Punjab is generally extended to this province.
79. Working of Land Improvement Loans Act and Agriculturists' Loans Act (paragraphs 359 and 362).	**Bombay.**—In the matter of remissions under the Agriculturists' Loans Act, the same concessions, which are extended to cultivators who are granted loans direct by Government, are extended to co-operative societies and their members. Thus, in the case of loans advanced by co-operative societies and banks in flooded areas, Government made grants for loss of interest to these bodies, in view of the fact that loans granted to agriculturists direct were free of interest for one year. **United Provinces.**—Advances from the Agriculturists' Loans Act during 1929-30 for the construction of tube wells amounted to about a lakh of rupees. **Burma.**—Attention is being given to finding means for improvement of the arrangements for the subsequent repair and maintenance of the tanks, weirs and protective embankments which are the principal kinds of improvements for which loans are applied for in Burma, and which are subject to frequent risks of damage by flood. That appears to be necessary before taking further measures to make the facilities afforded by the Land Improvement Loans Act better known. **Central Provinces.**—The local Government consider that the present working of the Acts is satisfactory but it is proposed to examine the rules after the report of the Central Banking Enquiry Committee is published. **Assam.**—Experience shows that the Acts have worked satisfactorily in Assam. As regards land improvement, irrigation is not an important matter in this province, which enjoys the benefit of copious rainfall, and there is no reason to think that landholders are not sufficiently acquainted with the facilities afforded by the Act. Loans under the Act are not extensive. The suggestion that part of the allotment under the Land Improvement Loans Act should be placed at the disposal of land mortgage banks was not supported for the present by the local Banking Enquiry Committee. There are now five such banks in the province. Their establishment is of recent date, and Government have not considered it necessary or advisable to make an allotment to them under the Land Improvement Loans Act, although certain Government loans at 6 per cent. interest have been given to strengthen their general position, these loans amounting in one case to Rs. 40,000 and in another to Rs. 30,000. Loans under the Agriculturists' Loans Act are issued freely when circumstances require them and are much appreciated. In the year 1929, agricultural loans amounting approximately to thirty lakhs of rupees were advanced to cultivators to enable them to recover from the effects of the disastrous floods which occurred in that year. No serious defects have been experienced or reported in the working of the rules either under the Land Improvement Loans Act, or the Agriculturists' Loans Act, which were last revised in the years 1927 and 1929, respectively. **North-West Frontier Province.**—The working of these Acts is, on the whole, satisfactory, but the recommendations made have been brought to the notice of the local officers, who appear to be fully alive to the further

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XII.—The Finance of Agriculture—*contd.*	
	improvements suggested by the Royal Commission, and these will be followed as soon as the expansion of the local Agricultural and Co-operative departments renders it possible to do so. **Baluchistan.**—The present working of the two Acts is satisfactory. **Delhi.**—The Acts are in force. During the year under report, Rs. 33,690 were advanced under the Land Improvement Loans Act, XIX of 1883, for the construction and repair of wells. No loan was advanced under the Land Agriculturists' Loans Act, XII of 1884. **Coorg.**—During the year under review, loans were granted to the extent of Rs. 21,305 under the Land Improvement Loans Act and Rs. 12,150 under the Agriculturists' Loans Act. The amounts are being utilised for objects for which they are obtained. The recoveries of loans granted in past years are as follows :— Rs. 24,588 under the Land Improvement Loans Act ; and Rs. 20,155 under the Agriculturists' Loans Act. The amount pending recovery is : Rs. 1,18,299 under the Land Improvement Loans Act ; and Rs. 79,646 under the Agriculturists' Loans Act.
80. Working of Usurious Loans Act. (Paragraphs 364-365.)	**Madras.**—Necessary action will be taken when the final recommendations of the Government of India on the All-India Banking Enquiry Committee report are received. **Bombay.**—This Act has been little used, chiefly, for the following reasons, *viz.*, (1) various means devised by lenders to evade it, and (2) the existence of the Deccan Agriculturists' Relief Act. Another reason may be that it is not sufficiently known in certain areas. No action is proposed by the local Government. **United Provinces.**—The recommendations of the United Provinces Provincial Banking Enquiry Committee are being examined and any action taken will be reported in due course. **Burma.**—Attention is invited to paragraphs 694 to 703 of the report of the Burma Provincial Banking Enquiry Committee, 1929-30, the orders of the Government of India on which are awaited. **Bihar and Orissa.**—In view of the general impression that the Usurious Loans Act is a good and useful measure which has not had a fair trial, steps have been taken by the Patna High Court to have it enforced. The local Government, therefore, deem it wiser to await results of this action taken by the High Court before concluding that it is necessary to embark on fresh legislation. The Patna High Court has accepted the proposal to include a special report on the working of the Usurious Loans Act in its annual reports on the administration of civil justice. **Central Provinces.**—The Act is being applied by the Courts to a considerable extent, although in Berar district there is less scope for its application as the rule of *damdupat* gives a substantial relief to the debtor class. The Act is no doubt affording some relief and in due course its sphere of usefulness is bound to spread. **Assam.**—Hitherto it has not been considered necessary in Assam to undertake special legislation to deal with the question of rural indebtedness, as the grip of the money-lender is believed to be not unduly severe. It was found in a district recently resettled that less than 1 per cent. of the total area of village land was held by traders or money-lenders, and that the practice of taking advances of money was considerably less common

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
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	than it was 20 years before, a fact which indicates the improved position of the peasant farmer, following directly upon a large increase in the sale prices of home-grown produce. Indebtedness undoubtedly exists and not infrequently means real distress, but it is held that the proper solution lies in the extension of co-operative credit societies, whose activities are being constantly extended. The local Banking Enquiry Committee made certain local enquiries and found that the Act was sufficiently known and applied in practice in Assam. They did not recommend any amendment. The recent fall in prices may, however, necessitate a reconsideration of the position. **North-West Frontier Province.**—A report on the working of this Act was included in the provincial report on the Administration of Civil Justice for 1929.
81. Examination of case for Money-lenders' Act. (Paragraph 366.)	**Madras.**—Necessary action will be taken when the final recommendations of the Government of India on the All-India Banking Enquiry Committee Report are received by the local Government. **Bombay.**—The Provincial Banking Enquiry Committee has since traversed the same ground as the report of the Royal Commission on Agriculture before it and with more expert knowledge on matters of finance. It is proposed to start from its recommendations on the subject. The High Court and the Judicial Commissioner's Court have been asked to report on the possibility and desirability of a new simple Insolvency Act for agriculturists. **United Provinces.**—The recommendations of the United Provinces Provincial Banking Enquiry Committee on this subject are being examined by the local Government. **Bihar and Orissa.**—For the reason stated in the remarks against item 80 above, it has been decided to postpone the consideration of action on the lines of the Punjab Money-lenders' Bill and the British Money-lenders' Act of 1927. **Central Provinces.**—No action has yet been taken. **Assam.**—This was examined by the local Banking Enquiry Committee who thought such legislation would be of doubtful value, and recommended that no action should be taken until experience is gained of the working of the Punjab Act. **North-West Frontier Province.**—No action has been taken but legislation enacted in the Punjab is generally extended to this province.
82. Examination of case for Rural Insolvency Act. (Paragraph 367.)	**Madras.**—The local Agricultural Advisory Committee considered that no action was necessary on this recommendation. **Bombay.**—The Provincial Banking Enquiry Committee has reported that the licensing of money-lenders is impracticable. Government are enquiring whether an Act based on the Punjab Regulation of Accounts Act to secure the submission to debtors by money-lenders of regular statements of account is practicable. Government are also considering whether any further measures to combat the Pathan money-lender menace are possible. **United Provinces.**—The local Government have under examination the recommendations made on this subject by the Provincial Banking Enquiry Committee.

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CHAPTER XII.—The Finance of Agriculture—*contd.*	
	Bihar and Orissa.—The local Government after careful consideration of the opinions of the High Court, selected District Judges, Commissioners of Divisions and District Officers, have decided not to introduce a Rural Insolvency Act. **Central Provinces.**—No action has so far been taken. The recommendations made are, however, under the consideration of Government and final decision will be reached after the report of the Central Banking Enquiry Committee is published. **Assam.**—The local Banking Enquiry Committee were in favour of a Rural Insolvency Act, provided it should not make it more easy for the debtor to evade his just obligations, if in a position to pay. They thought the existing Act needed tightening up in this respect. Government have decided not to take any action at present. **North-West Frontier Province.**—No action has been taken but legislation enacted in the Punjab is generally extended to this province.
83. Conciliation Bodies. (Paragraph 367.)	**United Provinces.**—The recommendations of the United Provinces Provincial Banking Enquiry Committee on this subject are being examined by the local Government. **Bihar and Orissa.**—The local Government have decided not to appoint any such Boards as (*i*) they would have no authority, (*ii*) their influence might in some cases be diminished by the fact of their being Government nominees, and (*iii*) the villagers can be trusted to choose the best available persons as *panches* or arbitrators. The local Government have, however, commended to all executive officers in the province the encouragement of the settlement of claims by the intervention of persons who are influential and trusted. **Central Provinces.**—No action has so far being taken. The recommendations made are, however, under the consideration of the local Government and final decision will be reached after the report of the Central Banking Enquiry Committee is published. **Assam.**—The local Government are of opinion that the creation of such bodies would be a difficult task but the question has not yet been considered. **North-West Frontier Province.**—The local Administration generally follows the Punjab practice in such matters.
84. Appointment of Official Receivers. (Paragraph 367.)	**United Provinces.**—The recommendations of the local Provincial Banking Enquiry Committee on this subject are being examined by the local Government. **Bihar and Orissa.**—The local Government agree with the High Court that official receivers will not pay their way at present and that, if anything is to be done at the expense of the State, the money could be better spent in other directions. **Central Provinces.**—No action has so far been taken. The recommendations made are, however, under the consideration of the local Government and final decision will be reached after the report of the Central Banking Enquiry Committee is published. **Assam.**—The local Government consider that there would be considerable difficulty in securing the assistance of suitable non-officials. The official staffs are already short-handed and fully occupied.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XII.—The Finance of Agriculture—*concld.*	
	North-West Frontier Province.—The local Administration generally follows the Punjab in such matters.
CHAPTER XIII.—Co-operation.	
85. Enquiry into working of Co-operative Movement in provinces other than the Central Provinces, the United Provinces, Madras and Burma. (Paragraph 373.)	**Bihar and Orissa.**—The local Government contemplate appointing a Committee on Co-operation in the cold weather of 1931.
	Assam.—A fairly close enquiry was made by the local Banking Enquiry Committee, 1930, and this formed one of the most important feature of their work. The results were sufficient to bring to notice the most serious defects in the system and to provide advice on a number of current topics.
	Delhi.—No enquiry exclusively into the working of the co-operative movement has been made in this province so far. The Central Areas Banking Enquiry Committee, however, made certain enquiries on some aspects of the movement and its impressions are given in Chapters X to XIII of its report.
	Coorg.—The proposal to appoint a Committee on Co-operation is under consideration.
86. Building up of efficient Co-operative Staff. (Paragraph 374.)	**Madras.**—Training classes are held by district federations for training *panchayatdars* of societies. In 1929-30, Government contributed Rs. 16,275 towards their expenses, while the district co-operative federations spent a similar amount from their own funds. Training classes were held in 1,306 centres at which 21,113 are said to have participated. The number of societies where *panchayat* members were trained was 2,531. For the year 1930-31, the Government have provided a subsidy of Rs. 25,000 for the conduct of these *panchayat* training classes. For the training of official and non-official staff, training institutes have been formed at six centres in the *mufassal*. To five of them a Sub-Deputy Registrar has been deputed by Government. In 1929-30, two courses of 4½ months each were conducted. 865 candidates underwent training. A sum of Rs. 22,690 was spent by the institutes in conducting the training classes, of which Rs. 19,087 was contributed by Government. For the year 1930-31, the Government have provided a subsidy of Rs. 20,000 for these training classes. The Government Institute of Commerce, Madras, conducted a longer course of nine months in 1929-30. Thirty-three candidates underwent training in Book-keeping, Banking, Co-operation and Auditing. The Government have lent a Deputy Registrar to the Institute for a period of two years at a cost of Rs. 3,960 per annum.
	Bombay.—Owing to financial stringency, it has not been possible to find any funds for any of the proposals.
	United Provinces.—The question of building up an efficient staff is two-fold. On the one hand, inefficient members have to be weeded out and on the other, an adequate number of better men have to be recruited. The staff of the provincial Co-operative department is not inadequate, except in regard to the number of assistant registrars. Two more men are badly wanted, but financial conditions preclude their appointment. A financial or banking expert is also required. The removal of the large number of the inefficient is a herculean task. They lower the tone of the department to such an extent that even new entrants tend to deteriorate. The question of recruitment of the right type of men is almost as difficult. Educated men with a rural outlook are not easy to find, nor can a man's

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIII.—Co-operation —*contd.*	capabilities be judged till he has worked for some time—and by then he has become semi-permanent. The best method of recruitment is still under consideration. Seventeen candidates have been selected for training as inspectors, though there are no vacancies at present. They will be trained for a year after which they may be required to work as honorary organisers. The period of training of supervisors has been increased from six months to a year, and the question of extending the period to two years is under consideration. Auditors are trained for nine months and are selected from among men holding university degrees in commerce. Half the number of auditors are now on a time-scale of pay of Rs. 70—2—100 per mensem and the principle of abolishing posts on other rates of pay and putting all posts on to the time-scale gradually has been accepted and is being given effect to. **Punjab.**—The matter was discussed in detail at a Conference of the Gazetted Staff of the Department in August, 1930, and it was agreed that improvement in the teaching system was essential. It is proposed to increase the number of secretaries' classes, and the Punjab Co-operative Union is providing a special grant for the purpose. Hitherto these classes have lasted a week, and little attention has been paid at them to the meaning of a credit society's by-laws, still less to the elementary principles of co-operation. This is being rectified and at least ten days are now being given to each class. In the two months' courses for Sub-Inspectors more attention is also being paid to methods of teaching, and steps are being taken to improve the existing staff in this respect. Finally, and this is the ultimate object of these measures, much more time is being spent on the teaching of the ordinary member. **Bihar and Orissa.**—No progress could be made in giving effect to this recommendation for want of funds. **Assam.**—As a first step, it has been decided to appoint a separate Director of Agriculture which will leave the Registrar of Co-operative Societies and Director of Industries free to re-organize and direct the co-operative staff. Lack of funds will at present prevent any further considerable strengthening of the department. Proposals for additional inspectors and their training have been under consideration. Two Divisional Auditors were added in 1929-30. **North-West Frontier Province.**—This province being, for co-operative purposes, under the charge of the Registrar of the Punjab, its co-operative staff is trained in exactly the same manner as that of the Punjab. By July 1929, the scope of the local Co-operative department had been considerably enlarged and inspectors had been posted to all the *tahsils* of the Hazara district, to the Swabi *tahsil* of the Peshawar district and to the Dera Ismail Khan district. During the co-operative year 1929-30 (1st August, 1929, to 31st July, 1930), inspectors were also appointed for the Mardan and Charsadda *tahsil* of the Peshawar district and another inspector was appointed for consolidation of holdings by co-operation. Fifty-five societies were started in the new areas during 1929-30. Development in Peshawar district was for a time brought to a standstill by political disturbances and all that could be done was to keep existing societies free from the prevailing political unrests. This object was achieved. **Delhi.**—The higher control and supervision of the co-operative movement of this province are carried out by the Registrar, Co-operative Societies, Punjab, through the Deputy and Circle Registrars of the adjoining districts. The field staff consists of two Inspectors deputed from the Punjab and 8 Sub-Inspectors locally recruited and maintained by the Delhi Audit Fund, administered by the Registrar, Punjab. Two Government paid Sub-Inspectors for consolidation of holdings work have also been employed. The whole staff is well qualified in the technical work of the movement and a persistent effort is concentrated on education of the members in the principles and meanings of co-operation.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIII.—Co-operation —*contd.*	Proposals for further extension of the staff are receiving the consideration of Government. The movement is mainly controlled by official agency because at this stage of the movement there is still a dearth of competent non-official co-operators who are in a position to supply true leadership and technical knowledge for proper control. **Coorg.**—The inspecting staff has been strengthened by the appointment of a permanent Inspector for the purpose of a systematic and comprehensive audit of the accounts of societies and also to attend to administrative functions, such as stimulation of collection work, general meetings, inspections, etc., and the subordinate service has been strengthened by adding three more Inspectors to the staff.
87. Supervising Unions. (Paragraph 375.)	**Madras.**—On 31st December 1930, there were 413 supervising unions and 22 district federations. The supervising unions supervise societies situated within a radius of seven miles, while the district federations co-ordinate the work of the unions in a district. The Government have provided Rs. 15,000 in the budget for 1930-31 for granting subsidies to weaker federations. The Provincial Co-operative Union at Madras was given a subsidy of Rs. 1,200 in 1929-30 for the conduct of training classes for *panchayatdars* of societies situated in the city and provision for a similar subsidy has been made in the budget for 1930-31. **Bombay.**—Steps have been taken to supplement and reorganise the resources of the supervising unions, which are discharging their responsibilities efficiently. **United Provinces.**—The United Provinces Co-operative Union now controls a staff of 189 supervisors who are employed in 55 out of the 69 central banks in the province. The remaining fourteen banks still control their own staff. The Union received a grant of Rs. 68,000 from Government. **Punjab.**—The union, referred to in the last report, was registered in September 1929, but only started work recently. It is too soon to judge the result. **Burma.**—In the absence of any definite scheme of reconstruction extensive organisation of supervising agencies by federating primary societies into supervising unions has been kept in abeyance. **Bihar and Orissa.**—The question has been kept pending for examination by the proposed Committee on Co-operation. **Central Provinces.**—One more Co-operative Institute for the Nagpur Division has been registered for the purpose of supervising and educating co-operative societies and carrying on general propaganda. **Assam.**—The local Banking Enquiry Committee did not endorse the recommendation that supervision should be taken out of the hands of the central financing bank. The question of how the supervisors should be enabled to get the necessary training will be considered. **Delhi.**—No supervising union exists in this province. **Coorg.**—A Federation of Unions was formed and registered to co-ordinate the activities of all supervising unions in Coorg.
88. Policy to be followed in selecting Registrars of Co-operative Societie. (Paragraph 376.)	**Bombay.**—The question of training a junior civilian in the work of the Co-operative department is before Government as also the proposal for the deputation of officers of the department to Europe to study the co-operative movement.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIII.—Co-operation —*contd.*	
	Bengal.—The recommendation that the best man available should be selected as Registrar has been accepted in principle and the post has been declared a tenure post for five years. The recommendations regarding the training of an officer as an understudy to the Registrar and the question of deputing officers to study the co-operative movement in Europe are still under consideration. **United Provinces.**—No action has been taken on the proposal to train an Indian Civil Service Officer to understudy the present Registrar. **Bihar and Orissa.**—A member of the Indian Civil Service has been appointed as Registrar of Co-operative Societies and he has been permitted to go to the Punjab and the United Provinces during the year 1931-32 to study co-operation in those provinces. **Central Provinces.**—The policy enunciated is followed with due regard to the exigencies of service. **Assam.**—The recommendation regarding the selection of Registrars has been fulfilled. The officer is, however, also Director of Industries. He has received a short course of training in the Punjab. **Delhi.**—There is no separate Registrar for this province, *vide* remarks against item 86.
89. Appointment of a whole-time Registrar in the Central Provinces. (Paragraph 376.)	**Central Provinces.**—The present arrangement of the dual charge of the Registrar, Co-operative Societies, combined with that of the Director of Industries, is to continue for a further period of one year. The question of separating the appointment will be considered later.
90. Training of Co-operative Staff. (Paragraph 377).	**Madras.**—*Vide* remarks against item 86. **Bombay.**—The Auditors of the Co-operative department are required to pass the examination for the Government Diploma in Accountancy or the Government Diploma in Co-operative Accountancy. No one is confirmed unless he has the necessary accountancy qualifications. Attempts are being made to have only qualified supervisors for all supervising unions and the question of re-organizing their cadre is still under consideration. The Bombay Provincial Co-operative Bank held refresher classes this year for its own staff and that of the District Central and Urban Banks and it hopes to hold such classes every year in future. **United Provinces.**—The period of training has been increased as already stated in the remarks against item 86, and the nature of the training has been made more intensive. The training includes instruction in agriculture and sanitation, as well as in co-operation. In addition, refresher classes are held from time to time. A training class was also held for bank accountants, but the results were far from satisfactory, only six out of 29 men being able to pass a very easy examination at the end of their two and a half months' training. **Punjab.**—*Vide* remarks against item 86. **Burma.**—The Joint Registrar, Co-operative Societies, visited the Punjab and the Bombay Presidency in March and April, 1930, to study the methods of the Co-operative department in these provinces. His report is being printed and will be considered in conference when ready. Arrangements are being made to send up six of the officers of the Co-operative department for the 1932 examination for the Diploma in Co-operative Accountancy.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIII.—Co-operation *—contd.*	**Bihar and Orissa.**—An institute for the training of the staff of the Co-operative department and a separate training school for Orissa have been established. These are being managed with funds raised by the banks and societies in view of the financial position which precludes additional help being given by Government. The services of an experienced Professor of Economics have been obtained to act as Principal of the Training Institute. **Assam.**—No steps have yet been taken, but the importance of the matter is admitted and it will be studied. **North-West Frontier Province.**—*Vide* remarks against item 86. **Delhi.**—The system of training of the co-operative staff is entirely on the lines followed in the Punjab. Only trained and qualified inspectors are deputed from that province. The sub-inspector enlisted locally are given their training there. The local staff joins with those of the neighbouring districts of the Punjab in their annual Refresher Courses and other activities of the department. The staff is recruited from the classes which are most likely to be intimately acquainted with the life of, and in full sympathy with, those among whom they have to work. The supervison work of primary societies is by official agency. The Central Co-operative Bank has no direct supervision but is always at liberty to enquire through its Directors about the working of any of its affiliated societies on the spot. The Secretary of the Bank has for some time been visiting societies with this object. **Coorg.**—The recommendation is accepted and two inspectors, two supervisors and three secretaries were sent over to Madras for special training to acquire practical experience in co-operative work.
91. Government Aid to Specialised Forms of Co-operative activity. (Paragraph 378.)	**Madras.**—The Royal Commission recommended that Government should give liberal assistance in the early stages to the more specialized forms of co-operative activity, such as consolidation of holdings, adult education, irrigation and the like. The Government provided Rs. 1,000 in the budget for 1930-31 for subsidy to irrigation societies. None of the existing seventeen irrigation societies have availed themselves of this provision, but certain places have been since selected in consultation with the Director of Industries and the Director of Agriculture for the formation of fresh well irrigation societies. There are eleven societies for land reclamation which owed Government Rs. 2·17 lakhs on 30th June, 1930. There are also 73 loan and sale societies, of which seven had borrowed Rs. 14,750 from Government for the construction of godowns in which they might stock the produce of the members before sale. **Bombay.**—Grants are being made to sale societies in their early stages to enable them to carry on a vigorous propaganda and to pay for a good business manager. Grants are also given to the Cattle Insurance Societies and backward societies. **United Provinces.**—Grants sanctioned for specialised forms of co-operative activity were (*i*) Rs. 1,200 for work on consolidation of holdings, (*ii*) Rs. 1,200 contribution for supervision of the Industrial Co-operative Bank, (*iii*) to the United Provinces Co-operative Union (*a*) Rs. 2,000 for village guides, (*b*) Rs. 4,662 for publication of the co-operative journal and (*c*) Rs. 68,018 for supervising staff for central banks, (*iv*) Rs. 5,000 for adult education and (*v*) Rs. 4,500 for rural reconstruction. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIII.—Co-operation *—contd.*	**Bihar and Orissa.**—The proposal for employing special officers at the cost of Government for the organisation of irrigation societies has been dropped, and it has been decided that the Assistant Registrars should try themselves to organise a few experimental societies in the first instance. Provision has been made in the Loans budget of the Co-operative department for financing a few such societies in 1931-32. **Assam.**—The recommendations are being followed. Aid in the form of an interest-free loan of Rs. 5,000 has been given for certain milk societies. A grant of Rs. 1,000 per annum is given for the maintenance of the accounts of societies in backward localities and among backward communities. A sum of rupees 5,000 is distributed to central banks to enable them to meet the cost of supervising their affiliated societies. There are two co-operative organization societies which have undertaken propaganda for the dissemination of co-operative ideas and the encouragement of special societies, particularly for public health purposes. A grant of Rs. 1,000 to each of these societies has been given on several occasions and to one of them, which has continued to show energy, in 1930-31. The other appears to languish. **Delhi.**—No financial aid is given to any specialised form of co-operative activity by the local Administration.
92. Government expenditure on Education and Audit. (Paragraph 378.)	**Madras.**—For co-operative education Government have provided the following sums in the budget for 1930-31 :— Rs. (1) Five training institutes at Rs. 4,000 each . 20,000 (2) District federations for holding *panchayatdars'* classes . . . . . 25,000 (3) Provincial Co-operative Union . . 1,200 (4) Government Institute of Commerce . . 4,992 The audit of co-operative societies is conducted by (1) Government Inspector, (2) by certified public accountants, and (3) by Government Inspectors deputed for work under audit unions and audit schemes in which definite contributions from societies are received. The majority of the societies are audited by Government auditors, of whom there were 278 on 31st December, 1930. When the Government staff audits a large society which does not belong to a supervising or audit union, an audit fee is levied from it. The total amount of audit fees collected from societies for the calendar year 1930 was Rs. 13,518-4-0 **Bombay.**—Government have recently decided to levy a small percentage charge on the working capital of all agricultural and non-agricultural co-operative societies to meet part of the cost of audit. **United Provinces.**—Government bears approximately half the expenditure for supervision and for audit. For the former it gave a grant of Rs. 68,000 to the United Provinces Co-operative Union for educating members in co-operative principles. Government expenditure on audit amounted to Rs. 60,567, but as an offset against this, Rs. 31,278 were realised from banks and societies as contributions. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. **Bihar and Orissa.**—The question is still pending for examination by the proposed Committee on Co-operation.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIII.—Co-operation —*contd.*	**Assam.**—It is intended that audit shall pay for itself whether a separate audit staff is created or not to relieve the inspectors for educative work. **North-West Frontier Province.**—Government at present pay for the whole of the co-operative staff. It is hoped eventually that, as in the Punjab, the societies will contribute a share of their profits to an audit fund. **Delhi.**—The local Administration gives an annual grant-in-aid of Rs. 2,520 to the Delhi Audit Fund which maintains the sub-inspectors for audit and education. The grant consists of three units of Rs. 840 each. Two units are for audit and one for propaganda. The total expenditure of the fund is nearly Rs. 7,500. The societies contribute nearly Rs. 5,000 from their annual profits. Thus the Government aid is only 33 per cent. of the total expenditure of the fund. It has earmarked 66 per cent. of its grant for audit and the rest for education. But in addition to the grant nearly Rs. 12,000 is annually spent on staff for inspection work. The duty of this staff is more for education than for audit. Consequently by far the major part of the Government expenditure is devoted to education.
93. Concessions to Co-operative Societies. (Paragraph 379.)	**Madras.**—The local Agricultural Advisory Committee which considered the recommendations of the Royal Commission advised that the following proposals should be examined :— (1) The recommendation that co-operative societies may be exempted from the payment of money order commission on sums remitted through the post offices as in the Punjab and Bombay, and (2) the proposal to exempt from income-tax interest on securities held by co-operative societies, especially land mortgage banks. As regards the first proposal, an estimate of the expenditure involved has been called for and the question will be considered. The second proposal is pending with the Government of India who have deferred action till the report of the Banking Enquiry Committee which is considering the subject of concessions to co-operative societies is available. **Bombay.**—The question is under consideration. **United Provinces.**—The following concessions have been granted to co-operative societies :— (*a*) Thrift and savings societies in the United Provinces are exempted from the operation of section 33 of the Co-operative Societies Act, II of 1912, to the extent that not less than five per cent. of the profits of such societies should be credited to reserve funds. (*b*) The Government of India exempted from payment of stamp duty awards of arbitrators in all disputes to which co-operative societies were parties. (*c*) Land mortgage societies were exempted from the provisions of section 4 (2) of the Co-operative Societies Act, 1912 (Act II of 1912), and permitted to register with limited liability. **Punjab.**—Since July, 1930, the stamp duty payable in connection with mutations has been remitted on all mutations due to the consolidation of holdings carried out by the Co-operative department. **Bihar and Orissa.**—An enquiry made from the Registrars of Co-operative Societies in other provinces shows that Bihar and Orissa enjoys all the concessions of importance which have been granted elsewhere. **Central Provinces.**—Proposals to make amounts under award recoverable as arrears of land revenue which were under consideration at the time of the last report have been sanctioned and rule 32 under the Act has been accordingly amended. A new section under section 42 of Act II of 1912 empowering the Registrar to issue orders of attachment before the issue of awards has been added. It may also be mentioned that cash chests of co-operative banks have been allowed to be lodged more freely in the district and tahsil treasuries and in one case even in a police station.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIII.—Co-operation —*contd.*	**Assam.**—The remission of three-fourths of the money orders' commission on transactions with Central Banks is under consideration. Remittance Transfer Receipts are already available at par for remittance between societies. **North-West Frontier Province.**—Societies in this province are granted the same concessions as those in the Punjab. **Delhi.**—All the concessions mentioned in paragraph 379 of the Royal Commission's Report are enjoyed by the co-operative societies of this province.
94. Attitude of Officials to Co-operative Movement (paragraph 380).	**United Provinces.**—This leaves much to be desired as far as collection work on behalf of co-operative societies is concerned. Tahsildars, who are already overburdened with their revenue work, have a tendency to look on the work as extra work thrown on their shoulders. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. **Assam.**—The recommendation has been accepted and the local Government lose no opportunity to encourage district officers to interest themselves in the movement. **North West Frontier Province.**—After five years of hard and patient spade work and persistent teaching, success has been achieved in the Hazara district. This has had such a wholesome effect on the other four districts of the province that district officers asked for the provision of co-operative staff for their respective districts. Inspectors have been provided as far as possible and work has now been started in every district with the exception of Bannu. Officials generally are now beginning to realise the value of the co-operative movement to promote the well-being of the rural population. **Delhi.**—The attitude of officials of all Government departments is generally sympathetic and they are helpful to the co-operative movement where their help is required. **Coorg.**—The recommendation is accepted. The attitude of Government is sufficiently well understood by all officers.
95. Land Mortgage Banks (paragraphs 381—384).	**Madras.**—*Central Land Mortgage Bank.*—This was registered on 12th December, 1929, and comprises certain prominent individuals and the twenty-one primary land mortgage banks then existing. The lands mortgaged by borrowers to the primary banks were to be assigned by them to the Central Land Mortgage Bank which would issue debentures on the security of the mortgages so assigned. The Government have guaranteed interest not exceeding 6½ per cent. on the debentures. They have also granted the Central Land Mortgage Bank a loan of Rs. 15,000, repayable in five years, free of interest, to meet the initial expenditure and another loan of one lakh rupees at 6 per cent. to be operated on as cash credit. Unfortunately the debentures have not been taken up freely by the public and the bank has been able to issue loans only to the extent of Rs. 5 lakhs. It is hoped that land mortgage banking will develop considerably when the Madras Land Mortgage Bill is passed by the Legislative Council enabling trust moneys to be invested in Central Land Mortgage Bank's debentures. *Primary land mortgage banks.*—On 31st December, 1930, there were thirty-eight primary land mortage banks. Some of these float their own debentures ; but the majority derive their funds from the Central Land

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIII.—Co-operation —*contd.*	Mortgage Bank. The land mortgage bank for the Badagas of the Nilgiris, a backward community, is almost entirely financed by Government. For 1930-31 Government provided Rs. 50,000 for investment in the debentures of this bank ; but a sum of Rs. 45,000 had to be surrendered, as the number of suitable loan applications was limited. **Bombay.**—Three Land Mortgage Banks have been started as an experiment last year at Dharwar, Broach and Pachora of East Khandesh and the services of a land valuer were lent, at Government expense, to each of the three Banks for a period of one year. Government have already purchased debentures worth Rs. 2 lakhs and the purchase of more debentures by Government is under consideration. **United Provinces.**—The recommendations of the United Provinces Provincial Banking Inquiry Committee have not yet been examined. In a year of financial stringency no scheme involving fresh expenditure could be proposed. A land mortgage society on a small scale has been organised in the Ghazipur district. **Bihar and Orissa.**—The Provincial Banking Enquiry Committee has recommended the establishment of such banks but not under the control of the Registrar of Co-operative Societies. The question has been kept pending for further examination in the light of the report of the Central Banking Enquiry Committee. **Central Provinces.**—The matter is under consideration of the local Government. **Assam.**—The recommendations have been generally accepted, save that it is considered premature to issue improvement loans through these banks, two of which have received large loans already mentioned under item 79. The banks have not yet reached the stage of issuing debentures. **Delhi.**—No Co-operative Land Mortgage Bank exists in this province, nor is it desirable to establish one unless normal agricultural conditions revive and the credit movement is well established. **Coorg.**—The feasibility of opening a Land Mortgage Bank is being investigated.
96. Single *versus* Multiple Purpose Societies (paragraph 385).	**United Provinces.**—Almost all existing societies in this province are single purpose societies. **Central Provinces.**—No more societies for multiple purposes have been formed. **Assam.**—The conclusions are generally accepted by the local Government. **Delhi.**—The single purpose society is the popular form in this province.
97. Encouragement of Co-operative Purchase and Sale (paragraph 387).	**United Provinces.**—Attention is invited to the remarks in items 5, 31, 68 and 126 regarding the purchase and sale of seed, *ghee*, sugarcane and eggs. A commission shop in Bijnor district worked at a profit for the first time in five years.

Subject (with paragraph of the Report).	Action taken by the Government for Administration).
CHAPTER XIII.—Co-operation —*contd.*	Cottage industries societies in rural areas were not able to undertake co-operative purchase and sale, but co-operative purchase by agricultural societies of articles, such as cloth, on the indent system from urban societies of weavers is being tried. **Bihar and Orissa.**—A proposal for the organisation of such societies on a large scale was submitted to Government but was referred back to the Registrar of Co-operative Societies for further consideration and report. Such societies, organised on a small scale, have all proved failures in this province, and as a heavy cost is involved in any organisation of such societies on a large scale, the primary question of difficulty of funds comes in. **Central Provinces.**—In addition to the two societies for helping the weavers there are also six *adat* shops which perform exactly the same functions as ordinary commission agents but secure for the producers fair weighment, fair dealing and fair price. **Assam.**—Sale societies have so far proved a failure. Until the organising staff has more training nothing can be hoped for in these times. **Delhi.**—There is no co-operative sale or purchase society in the province nor is the complicated form recommended possible unless cultivators are fully educated in the true conception of co-operation. **Coorg.**—A co-operative purchase and sale society is functioning satisfactorily. Another society has just been started and its working is being watched keenly. Efforts to give effect to the recommendation will be made as far as possible.
98. Expert advice to Co-operative Societies (paragraph 388).	**Madras.**—A Deputy Director of Agriculture has been appointed for a period of two years in accordance with the recommendation of the local Agricultural Advisory Committee. He will look after the co-operative loan and sale societies. **United Provinces.**—A dyeing instructor was deputed to instruct the Agra *durrie* weavers co-operative societies and a leather instructor was on deputation with the co-operative department. The chief expert required at present is a marketing officer. Experience with the experts already provided for textile and leather work seems to show that the need is for more expert advice on the marketing and sale side than on the production side. **Assam.**—This is being done in the case of milk societies, which are being organised under the supervision of the Live-stock and Dairy expert. **Delhi.**—For societies of an exclusively technical character, expert advice of other departments is secured. For example, the Cattle Breeding Societies are supervised and guided by the Veterinary Officer specially deputed to the Co-operative department for this purpose. The consolidation of holdings scheme is carried on by a separate staff recruited from the Revenue Department.
99. Appointment of Agricultural officers to work under Registrars of Co-operative Societies (paragraph 388).	**Madras.**—*Vide* remarks against item 98.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIII.—Co-operation —*concld.*	**Bombay.**—The Deputy Registrar of Co-operative Societies in Sind has had control of the agricultural propaganda staff and agricultural propaganda in several *talukas* in Sind. The Chief Agricultural Officer in Sind has now assumed full control of this work but it is under consideration to maintain the interest of the Co-operative department in agricultural propaganda. **United Provinces.**—Two members of the Subordinate Agricultural Service have been appointed to work in the Co-operative department and three fieldmen were deputed to work solely among selected groups of co-operative societies. Co-operative inspectors and supervisors are trained in agriculture to some extent. Three inspectors are L. Ags. and there is an inspector for agricultural propaganda. **Punjab.**—The *mukaddams* (supervisors) employed with the Co-operative Better Farming Societies are being withdrawn on the expiry of their term of three years, and now only seven remain. One society has agreed to pay for its *mukaddam* for a year so as not to be deprived of his services. **Assam.**—Hitherto the Departments of Agriculture, Industries and Co-operative Societies have been under the same head. Such steps as may be necessary to ensure co-ordination now that they are separated will be taken. **Delhi.**—As there is no separate Registrar for this province, the question of appointing an agricultural expert does not arise.
100. Encouragement of Official and Honorary Workers to study Co-operative Developments in other Provinces (paragraph 389).	**Bombay.**—The question is under consideration. **Assam.**—Conferences are frequently held within the province and raise considerable interest. During the year under review the Registrar was sent to the Punjab for study of co-operative methods. **Delhi.**—The co-operative officials are in direct touch with the co-operative development in the Punjab, and the honorary workers also freely avail themselves of opportunities of coming in contact with the co-operative activities in that province.
CHAPTER XIV.—The Village.	
101. Medical aid (paragraphs 401—404).	**Madras.**—With a view to bring medical relief within easy reach of the rural population in this Presidency, Government inaugurated in 1924 a scheme for providing medical aid in rural areas by subsidizing private medical practitioners. During the past six years the scheme has made appreciable progress which testifies to its increasing popularity. The total number of subsidized rural dispensaries sanctioned under this scheme up to the end of 1930 was 545 and out of this about 434 dispensaries were actually working at the end of the year under report.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIV.—The Village— *contd.*	**United Provinces.**—The district public health organization has been extended to the Garhwal district. Proposals for expansion of the existing health organization in the Gorakhpur and Azamgarh districts could not be sanctioned for want of funds, but the District Board, Gorakhpur, have, nevertheless, recently started small scheme in two tahsils. It consists in creating small sanitary circles of a radius of seven miles each in charge of a resident public health official, whose duties in the circle are to perform vaccinations, deliver hygiene lectures, give hygiene demonstrations, register vital statistics, perform anti-epidemic work and sell or distribute quinine. The scheme is important in that it aims at concentration of various items of public health work in a small area and the results will be watched with interest. A district organization has been formed in Pilibhit, with the District Magistrate as President, with a view to bringing simple medical aid within the reach of villages. Sufficient funds have been raised for the purpose and the Director of Public Health has deputed an officer on reserve duty to organize and supervise the work. The Public Health department has continuously conducted hygiene propaganda in villages, at fairs and whenever and wherever opportunity offered. It is felt, however, that to create a sanitary conscience, more attention should be given to the younger generation. Village schools have consequently received much attention from officers of the department, and in 1930 the village school area, instead of the *patwari* (village accountant) circle, was taken as the unit area for work. The interested school teacher is designated "sanitary scout master" and the boys enlisted for the work are designated "sanitary scouts". This change has made the scheme of greater educative value. Hygiene is now taught in most of these schools for half an hour a week. A course of lectures on public health has been arranged for teachers during their training at the Government Normal Schools at Allahabad, Lucknow, Fyzabad, Gorakhpur, Muzaffarnagar, Agra and Jhansi. District Medical Officers of Health now visit village schools to inspect the health of scholars and to give lectures and demonstrations. Posters on public health are exhibited in some schools. It is hoped that in the course of time, these measures will inculcate among the younger generation ideas of personal cleanliness and create a demand for better sanitation. The Public Health department has also prepared publicity cinema films on cholera, small-pox, tuberculosis, malaria, maternity and child welfare and the sanitary arrangements at the Allahabad and Hardwar Kumbh *melas*. These films are exhibited wherever possible and illustrate by realistic scenes set in familiar surroundings, the cause and manner of the spread of diseases. A motor lorry has recently been purchased to facilitate the display of these films in roadside villages. A set of loud speakers to broadcast hygiene lectures to large gatherings was also in use. The Co-operative department has also carried on propaganda to inculcate sanitary notions among villagers and a certain amount of progress has been achieved. About 500 members of co-operative societies were trained in first aid and 312 *dais* (midwives) were taught the use of more hygienic methods. In nearly 900 villages manure is now stored outside the *abadi* (village site) and in 193 co-operative societies the village aid scheme has been fully introduced. Village dispensaries were started in 383 villages, bringing the total up to 500, at which about 28,000 men were treated. The Land Records department encouraged *patwaris* to learn something of hygiene, cattle disease and first aid. Health officers and veterinary assistant surgeons were asked to deliver occasional lectures in the *patwari* schools and the teaching of first aid is proposed to be tried in the districts of Allahabad, Lucknow and Cawnpore. The Board of Public Health continued to give assistance for the execution of sanitary work in rural areas. The amount allotted in 1929-30 for this purpose was more than one and a half lakhs of rupees. Government have made grants to district boards and to individuals for the expansion of medical relief by opening dispensaries in rural tracts and giving subsidies to medical practitioners who settle in rural areas. Thirty such dispensaries were working during the year and fifteen medical practitioners have settled in rural areas on the Government subsidy basis. The system of opening dispensaries and granting subsidies is working satisfactorily. Maternity and child welfare work has not yet spread to the rural area to any appreciable extent, but a comprehensive scheme has been prepared

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIV.—The Village— *contd.*	by the Director of Public Health. District boards were originally asked to contribute two-thirds of the cost of the scheme in their districts, but in-spite of the reduction of their contribution to one-third, their response has been poor. This with the lack of funds, has so far prevented the scheme being put into operation, but the matter is being further considered with a view to obtaining funds. It is proposed gradually to extend the scheme for posting medical workers and midwives to branch dispensaries in rural areas for general medical work and to employ them on maternity and child welfare work as well. District Medical Officers of Health have given attention to the improved training of indigenous *dais*. *Panchayats* have been interested in the work and some have arranged for medical attendance in midwifery cases. Four thousand six hundred and thirty-seven *dais* were trained by the district health staff in 26 out of the 28 districts where the health service is in force. Government gave a grant of Rs. 72,200 for expansion of medical relief to women by women in rural tracts by the employment of female doctors and midwives. So far only twelve women's dispensaries exist, but more will be opened when suitable women doctors become available and conditions of service are improved. Qualified midwives are also employed in 27 places in rural tracts, but they will gradually be displaced by qualified women doctors when funds are available. Proposals for the separation of the post of Secretary to the Provincial Branch of the Lady Chelmsford League from that of Superintendent of Medical Aid to Women and the appointment of a whole-time medical woman to control maternity and child welfare work under the League are under consideration. The administrative convenience resulting from the proposed separation will be of considerable advantage to the development of maternity and child welfare work in the province. **Burma.**—Four District Health Officers were sanctioned as an experiment for two years. A model sanitary unit experiment was also inaugurated with the assistance of the Rockefeller Foundation in the Hlegu Circle of the Insein District. The department is as yet undeveloped in Burma and it would be premature to introduce the elaborate organization in force in Madras, though it may be adopted as an ideal to be worked up to when circumstances permit. The local Government have a scheme of subsidised medical practitioners, of whom there are at present 19, in receipt of premia ranging from Rs. 50 to Rs. 125 per mensem. Burmese doctors can also receive training in elementary medicine and minor surgery in Bassein and Mandalay hospitals, where they receive a small stipend. **Assam.**—An additional Assistant Director of Public Health was appointed in 1928 and also a Public Health Engineer. Two epidemic units have been added, making five in all, consisting each of 3 sub-assistant surgeons, 6 disinfectant carriers and 3 peons. A scheme for the creation of posts of District Health officers and the training of the vaccination staff in health duties has long been under consideration, but funds have not been available. As the incidence of *kala azar* is now definitely on the wane the future of the staff of 6 assistant surgeons and (in 1930-31) 104 sub-assistant surgeons retained to deal with this disease has come under review. It has been decided to reduce the number of sub-assistant surgeons to 85 in 1931-32. It is, however, contemplated to hold a conference in June, 1931, to decide whether a service should be formed to deal with the many other communicable diseases in Assam, such as yaws, malaria, leprosy, tuberculosis, small-pox, cholera, dysentery, etc., in respect of which much work can and should profitably be done with the co-ordination effected by the Assam Medical Research Society referred to later on. The conference will consider (1) the establishment of a permanent public health service of 6 civil assistant surgeons and 75 sub-assistant surgeons at a cost of Rs. 1,68,322, ultimate, as compared with Rs. 1,68,320 in the revised budget for 1930-31, for the *kala azar* staff; and (2) whether it should discharge function in connection with medical inspection of schools, control of food adulteration, improvement of rural health on co-operative lines, the establishment of district advisory health boards and kindred subjects.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIV.—The Village— *contd.*	The cost of the whole Department (excluding *kala azar*) was Rs. 6,14,589 in 1926-27, and for 1931-32 the budget is Rs. 4,69,850. A society for promoting medical research and investigation into the more widespread epidemic and endemic diseases, especially malaria, within the province was launched at the instance of Government in the autumn of 1930, and a grant of Rs. 20,000 has been made to the society from provincial funds. The question of training vernacular school teachers in first aid and also in vaccination, has been considered but dropped as it was found to be impracticable. The extension of the first-aid classes now held in one of the Normal schools to all teachers under training at these schools is contemplated. The only attempt hitherto made by a local board to subsidise a private practitioner in an area remote from a charitable dispensary did not prove sufficiently successful for Government to undertake to press the system on the boards. **North-West Frontier Province.**—As the local bodies in this province are too poor to incur any additional expenditure on medical relief, a comprehensive scheme of medical and public health reforms has been submitted to the Government of India. **Baluchistan.**—There is no separate Public Health department in the province. In Quetta, the Civil Surgeon supervises sanitation and has an Assistant Health Officer under him. In addition there are seven vaccinators in the province. The sanitation of towns and villages in which there is a hospital is supervised by the Civil Surgeon or Medical Officer or the subordinate-in-charge of the local hospital. In villages in which there is no hospital, there is no special staff of the Health department to supervise sanitation. The prevention of the outbreak of infectious diseases is carried out, as far as possible, by the local district medical staff. This also applies to the question of vaccination in the different districts. At present, there is no arrangement for the supply of medical relief in rural areas which are out of reach of hospitals, dispensaries or medical practitioners, nor is there any provision for a monthly subsidy for qualified practitioners to induce them to settle in the villages. **Delhi.**—There are five dispensaries in the rural areas of this province and a request was made for the opening of two more dispensaries in 1928. Owing to financial stringency, these two dispensaries could not be opened. The five existing dispensaries serve a radius of five miles from each dispensary. In addition, the public health staff met the requirements of diseases amongst the villagers by transporting medicines to the villagers themselves. In 1930, a special quinine distribution amongst the villagers was undertaken against malaria, both by the public health staff and by distribution by the district board members. **Coorg.**—The several dispensaries are within easy reach of the villages and the attendance shows the popularity of these institutions. Anti-malarial work has been taken up and attention is being concentrated on particular areas and the effect has been felt appreciably. Mosquito breeding places are sprayed with larvicide mixture ; swamps are drained or planted with *Eucalyptus robusta* ; pools, ponds and surface drains are closed or cleaned ; tanks are kept free from rank vegetation, and school-going children are treated with quinine. Lectures on the prevention of malaria were delivered in important centres by the Red Cross Society. A hookworm campaign was started in July, 1930, with the object of stimulating interest on the part of the planters to improve the health of their labour force. This operation was extended to many villages, schools and towns.
102. Improvement of Water-Supply (paragraph 406).	**Bengal.**—In addition to the annual provision of Rs. 2½ lakhs, the local Government made a provision of Rs. 6 lakhs this year for making loans to district boards out of which about Rs. 1½ lakhs was utilised for certain district boards and the balance was surrendered as a measure of retrenchment.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIV.—The Village *—contd.*	**United Provinces.**—To ensure more systematic work on the improvement of water supplies, District Medical Officers of Health were requested to prepare a register of drinking wells in their respective districts and to collect information as to the precise improvements required in each case, so that a definite programme of repairs could be prepared. The work is still proceeding. Model byelaws containing specifications for constructing new wells and for the annual cleaning of existing wells and their protection from pollution, have recently been circulated to district boards. Minor, but necessary, improvements to drinking wells were continued under the village aid scheme. In some cases villages, with a little monetary assistance, themselves carried out the necessary repairs. The amended United Provinces Village Sanitation Act empowers district officers to inquire into the sufficiency and purity of water supplies in villages and to sanction advances for the repair, improvement, or construction of wells in any village, provided the applicants furnish security for the repayment of advances. Rules have been framed by Government laying down, *inter alia*, that— (*a*) advances will be free of interest until further orders, (*b*) the Board of Public Health should estimate the amounts required by district officers for granting loans to villagers and place the requisite amounts at their disposal, and (*c*) advances for cleaning and repair of wells shall be recovered within a period not exceeding two years. These rules should go a long way towards assisting villages to improve their water supplies. No special co-operative societies have been formed for the improvement of water supplies, but this work is attended to along with other village improvement work. More than 2,500 wells were cleaned and disinfected and 233 were provided with parapets. **Assam.**—In the years 1925-26 to 1927-28, Government allotted the whole increased revenue from the Assam Stamp and Court Fee Acts (estimated at ten lakhs of rupees) to rural water-supply. As the Council refused in the spring session of 1928 to continue these measures or make them permanent, the funds needed for liberal grants on this account are impossible to find save in small sums. No provision was made in 1930-31 but a sum of Rs. 40,000 was found by reappropriation to replace and repair rural water supplies damaged by earthquakes in Goalpara and Kamrup. No provision will be possible in 1931-32. It has not yet been possible to finance pure piped water supplies in many of the towns. The Rural Self-Government Act, 1926, to put which into force steps are now being taken, provides for specail levies to be made at the initiative of the *panchayats* for such purposes as wells and tanks. **North-West Frontier Province.**—The Government of India have committed themselves to the extent of sanctioning Rs. 2,55,000 for the water-supply schemes in rural areas mentioned under this head in the last report. The plans and estimates for these works are under preparation. **Baluchistan.**—There is no special arrangement at present for the provision of an improved water supply. Most of the villagers use *Karez* water. In the bigger places, *e.g.*, Pishin, Gulistan, Sibi, Hindubagh, Barkhan, Musakhel, etc., there is a piped water supply. **Delhi.**—A proposal is under consideration for an improvement of the water supply to Shahdara. This rural town is situated on the eastern bank of the Jumna river and has been a source of diseases in the past due to lack of water supply. With regard to villages, a list of all villages requiring improved well water supply was made and a programme has been set out for improving the most urgently required improvements for wells. The shortage of rainfall in the Delhi Province during the last three years has resulted in a somewhat distressing state of affairs in the villages both for well-drinking water for human beings and pond drinking water for cattle.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIV.—The Village —*contd.*	**Coorg.**—Providing good drinking water by sinking wells in several places has been receiving special attention.
103. Addition of Fish to cultivator's diet (paragraph 415).	**Madras.**—The local Government sanctioned a scheme for a year at a cost of Rs. 10,136 with the following objects :— (1) to examine ponds, irrigation wells, etc., in the villages to determine their suitability for fish culture and to devise methods for improving their fisheries, (2) to inspect lakes and rivers in the neighbourhood of villages to ascertain if they could serve as sources of supply for stocking the ponds and wells, and (3) to propound piscicultural methods and aims to villagers, with a view to induce them to improve the fishes of village ponds individually in the case of their own wells or tanks, and on a co-operative basis in the case of communal ponds. Sixty-three villages in Chingleput district were visited by the staff in 1930 and a total of 75 tanks, 38 ponds and 617 wells were surveyed. It was possible to stock only two private wells and a pond belonging to the Chingleput Municipality before the end of the year. The fish so stocked have been found, by actual fishing, to be growing rapidly and are expected to be in a marketable condition soon. The owners of only 32 wells found suitable for fish culture have so far agreed to have them stocked with *catla*, the best food fish for village ponds. Another source for fingerlings of *laboe*, another food fish, has also been located close to Madras and arrangements are being made to use this fish. Government had to defer a scheme for the establishment of a refrigeration station owing to financial stringency. An experiment in refrigeration is conducted by a fish merchant at Malpe on the advice of the Fisheries department. **Bihar and Orissa.**—In addition to the two existing carp-fry distribution centres at Patna and Ghatsila, two more new centres were opened at Cuttack and Sambalpur which chiefly account for an increase of more than 60 per cent. over the supply of fry of 1929-30. One of the Sone canals is now being stocked with carp-fry from the Patna centre. The question of stocking another canal from the same centre is now under examination. **Assam.**—Fish is already a favourite article of diet with most of the people of the province. There is no separate departmental staff, the fisheries being administered by the Revenue and Agricultural departments. Special enquiries have from time to time been made and an officer was once trained for the purpose of development, but subsequently found other employment. The only important need in regard to the fisheries is a method of keeping them clear of water hyacinth economically, but no practicable method has yet been evolved. **Baluchistan.**—Fish is not a staple food of the villages in this province. The inhabitants are largely meat-eaters and depend on wheat and *jowari*. There is no special Fishery department. **Delhi.**—This recommendation does not apply to the Delhi Province as the rural population is not fish-eating.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIV.— The Village —*contd.*	
	Coorg.—The terms of the Fisheries Act have been relaxed by special Notification and this has afforded further facilities in this direction.
104. Research into Problems of Human Nutrition (paragraph 417).	**United Provinces.**—The Public Health Department has devoted a great deal of attention to the dissemination of correct information regarding diets. A small food primer containing a few simple facts relating to the requirements of well balanced diets was prepared in 1929 and widely distributed. A more comprehensive note entitled "Dietaries for cultivators" has now been prepared, in which an attempt has been made to work up different combinations of articles of diet at the lowest cost per month per individual, which meets the requirements of well balanced diet. This note is being circulated to all Public Health officers and school teachers, with instructions to the former to give proper advice to villagers and school children, and to the latter to give occasional lectures in their classes. It is also proposed to bring out an abridged edition of this note in the vernacular for the use of the younger school children, containing advice on "What children should eat to be healthy", and "what adults should eat to be healthy". The appointment of medical officers of health as school health officers has enabled them to approach school boys more directly and advise them on the subject. **Burma.**—This work could be undertaken either at the Harcourt Butler Institute of Public Health or at the Pasteur Institute, Rangoon, where a certain amount of investigation into *beriberi* has already been done. **Central Provinces.**—In the absence of accommodation and trained staff, it is not possible for the Public Health Institute to undertake work of this nature and the subject will be taken up when the Public Health Institute for the province is constructed. **Assam.**—The local Government have neither the men nor the money to engage in an enquiry into nutrition. **North-West Frontier Province.**—The appointment of a research officer for the North-West Frontier Provincial Laboratory has been included in the scheme referred to under item 101. If and when the research officer begins to function, research into the problems of human nutrition could also be carried out by him as far as possible. The Punjab Pure Food Act of 1929 has been extended to this province for the prevention of the adulteration of food-stuffs in the towns.
105. Co-operative effort to improve amenities of Village Life with special reference to Uplift Campaigns and Rural Community Movements (paragraphs 421—424 and 429).	**Madras.**—The local Government have directed that propaganda work should be conducted in whatever manner has proved successful, *e.g.*, through co-operative societies, village *panchayats*, village headmen and schoolmasters. There are no societies specially created for rural reconstruction work but it is being carried on at various centres under the auspices of local co-operators and with the help of grants from the Madras Central Urban Bank. One other central bank is also doing much useful work in this direction.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIV.—The Village —*contd.*	**Bombay.**—The Deccan Agricultural Association, Poona, has taken up the question of rural uplift at Khed-Shivapur—a village 14 miles from Poona—and the Agricultural department is giving its full co-operation in the scheme. Similarly a landlord in the Bijapur district (Kakhandiki village) has donated as a trust an amount of Rs. 18,000 for rural uplift, and the Department is taking advantage of this offer. The Department is also negotiating with a gentleman who wishes to spend a lakh of rupees for the benefit of farmers in the Poona district. **United Provinces.**—The training of "village aiders" has been designed to provide that 'leadership' and 'guidance' that the Commission have pointed out as necessary in village life. The officers of the Public Health department occasionally rely on these aiders for petty sanitary duties in the villages. There is as yet no definite movement for the establishment of local community councils for sanitary improvements in villages, though one or two district medical officers of health reported the establishment of local "sanitation" or "uplift" committees in 1929. Reports for the year 1930 have not yet been received. Village *panchayats*, where established, seem to fulfil the requirements of local community councils so far as the Public Health department is concerned and these bodies are reported to be taking increasing interest in the matter. An important measure for the promotion of rural uplift was enforced in 1929 in the Junior Red Cross movements. The scheme consists of the formation of clubs for younger school children for practice of health habits. The boys are given practical instruction in sanitation and hygiene by officers of the Public Health department and they act plays on epidemic diseases, chant health songs and render first aid. All these will tend to improve social conditions in villages. Seventy-five Junior Red Cross groups have so far been formed with a membership of about 3,000 boys, almost all of whom are in village schools. The proposal is being considered in Gonda district of making Saturdays non-tuitional days and devoting them entirely to bathing and washing of clothes, and to arranging outings and meetings under the auspices of the Junior Red Cross. The scheme will be carried out by the Public Health department in conjunction with the Education department. Legislation is an important medium for the education of the general public and cautious advance is now being made towards the enforcement of simple regulations in villages in which a sufficient amount of previous propaganda has been done by the health staff. It is noteworthy that enforcement of sanitary regulations in such villages is comparatively easier than in others. Regular lectures in hygiene and first aid are now given to *patwaris* under training in their schools in order to acquaint them with their duties in relation to the Public Health department and also to make them more useful generally. More than 162,000 copies of a booklet in the vernacular, giving in simple language symptoms of the common epidemic diseases of the rural areas, their cause and manner of spread, how to escape them and what to do if attacked, have been distributed to *mukhias*, *patwaris* and head teachers of primary and middle schools in the villages. *Mukhias* and *patwaris* have been instructed to read over instructions for particular diseases to villagers at the time of the prevalence of the diseases in question. Teachers give lectures to scholars from the booklets supplied to them. The presence of these instructions, to which reference can be made in case of need, will be of value to villagers. In addition to the proper storage of manure, an important requisite for the improvement of village environs is the provision of drainage. Regular drainage systems in villages are out of the question, but considerable progress has been made in the establishment of soakage pits in individual houses for the reception of domestic sullage. These pits can easily be constructed by the villagers themselves, generally from material available locally, and require attention once in about six months only. Villages where these pits have been installed look distinctly cleaner. With a view to providing ocular demonstration to villagers Government have issued orders for the provision of such pits in all Government buildings in rural areas.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIV.—The Village *—contd.*	The lines of work adopted by the Co-operative department for improving the amenities of village life were mentioned last year. Progress has been continued along those lines. A number of credit societies have taken up this work in addition to their main duties, but in some cases this work is entrusted to special societies. There are 106 of the latter, of which 22 are registered as societies for better farming, 51 for better living, fourteen for rural reconstruction and 19 for adult education. The underlying object of all these societies is practically the same—uplift and development of village life. The majority are located in the Lucknow, Benares and Partabgarh districts. In most places the inspiration comes from the supervisor or inspector of co-operative societies, in a few cases from the school teacher where adult education work is undertaken, while in the Partabgarh district, the experiment is being tried of appointing specially trained men for each village or group of villages where the work is taken up intensively. **Central Provinces.**—A beginning has been made in this direction in certain small areas as an experimental measure. **Assam.**—The attempt to revive the life of the village and to encourage the development of desire for improvements has taken the form of the Rural Self-Government Act, 1926. The part to be played by officials in the organization of the village corporations is reduced to a minimum, and the local boards have also no voice in their management. Owing to the fact that it has not been financially possible to finance the appointment of a whole-time Registrar of Village Authorities, on which the whole scheme rests, or to find large sums for the Authorities to spend, there has been delay in putting the Act into operation. For the purposes of organisation and co-ordination of local effort two private societies named the Upper Assam and the Surma Valley co-operative organization societies have been registered and have received help from Government. The latter received Rs. 1,000 in 1930-31. Two other bodies, the Sylhet Social Service League and the Saroj Nalini Dutt Memorial Association, have also been at work in the Surma Valley districts and have received help from the discretionary grants of Ministers and also from the Government. The co-operative organization societies aim at encouraging the growth of co-operative action in regard to sanitation, water supply, maternity and similar matters. **North-West Frontier Province.**—It is hoped that the general teaching imparted to village co-operators will have some effect in this direction; and many societies formed for other purposes have incorporated moral bye-laws in their ordinary bye-laws; further a beginning has already been made in the registration of better living societies. The results have been encouraging. **Delhi.**—A considerable amount of work has been and is being done in the province for the improvement of village life. **Coorg.**—Red Cross Societies and Baby Welfare Associations have been an important item in the programme of uplift in rural and urban areas.
106. Assistance from Universities in work of Rural Development (paragraph 426).	**Bombay.**—There is an increasing number of theses being offered on agricultural and rural subjects by the students of the Bombay University School of Economics and Sociology. The optional subject of agricultural economics attracts a fairly large number of men in the final year of their course in the Poona College of Agriculture. Besides, the Board of Studies in Agriculture have recommended the University to give more encouragement to such studies. **Bengal.**—In 1930, the University of Calcutta spent a sum of money in making furniture and equipment grants to certain primary schools in Bengal.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIV.—The Village —*contd.*	**United Provinces.**—There is nothing to report. **Bihar and Orissa.**—Nothing to add to the previous report. **Central Provinces.**—The question is under the consideration of the Nagpur University. **Assam.**—There is no university in the province. **Delhi.**—An effort was made through the Delhi Health and Social Service Union to interest university students in rural work but with little success. Some of the normal schools in the rural areas are taking an active part and send their students to selected areas to study rural public health problems.
107. Establishment of Bureaux of Rural Economic Research (paragraph 427).	**Madras.**—A Board of Economic Research is not considered necessary by the local Government. **Bombay.**—No action has as yet been taken. **United Provinces.**—*Vide* remarks against item 141. **Punjab.**—Nothing to add to the previous report. **Bihar and Orissa.**—Nothing to add to the previous report. **Central Provinces.**—Nothing to add to the previous report. **Assam.**—There has been little or no demand for an enquiry into rural economic conditions. It was intended as a result of a resolution passed by the local Legislative Council to set up a committee to enquire into the causes of unemployment, but this was not done because the promoters, who belonged to the *Swarajist* party, refused to serve. The number of persons available with a knowledge of economic and statistical science is very limited. At present, Government have decided to leave the acquisition of such material to the Settlement Officers, who have the only staff trained for such a purpose.
108. Settlement of Village Disputes by Local Arbitrators (paragraph 431).	**Madras.**—The local Government consider that no action is necessary. **United Provinces.**—No special arbitration societies have been formed, but the work is carried out by credit and better living societies and numerous petty disputes have been decided locally instead of being taken into court. Village *panchayats* were in a state of stationery activity. Their number has now become stabilised in the neighbourhood of 5,000, the actual total for 1929-30 being 4,763, of which 547 have been granted enhanced powers. **Bihar and Orissa.**—Nothing to add to the previous report. **Central Provinces.**—Nothing to add to the previous report. **Assam.**—The intention of the Rural Self-Government Act, 1926, is that when the Village Authorities are established, village courts and benches—not necessarily composed of members of the Village Authority—should be set up wherever local conditions permit. The courts and benches

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIV.—The Village— *concld.*	
	set up hitherto under the Bengal Village Self-Government Act have evoked considerable enthusiasm and in many cases have done useful work. The local Government have, therefore, not considered alternative methods such as the promotion of arbitration societies. Sporadic efforts in this direction have been made by the Congress. **Baluchistan.**—This system is already in vogue in this province. All disputes are settled by *Jirgas* (Councils of Elders). **Coorg.**—A Village Panchayat Act was introduced in Coorg.
CHAPTER XV.—Education.	
109. Female Education (paragraph 444).	**Madras.**—The Director of Public Instruction has already submitted a special report on the "Development of women's education" and action will be taken in due course on the several suggestions contained in it. The local Government consider that no special investigation on the relation between female literacy and the spread of general literacy is necessary. **Bombay.**—Efforts are being made to spread literacy among women by the opening of girls' schools. The number of girls receiving education is steadily increasing. No steps however appear to have been taken by Local Authorities to record the educational history and subsequent development of children of typical cultivating families, etc., as suggested by the Commission. The Chairman, District School Board, Panch Mahals, remarks "The statistics and data even if collected will be hardly refreshing for the revaluation of an idea universally accepted or for their being used as convincing propaganda either. The immediate want is the provision of funds." In Sind, one of the chief difficulties in the way of progress of education of girls is the purdah system. Parents will not send their girls to schools staffed with men teachers. As the supply of women teachers is very limited progress is likely to be very slow, since it will be difficult to introduce compulsion in the case of girls. The following are some of the special measures taken by Local Authorities in Sind for the education of girls :— (*i*) The District Local Board, Larkana, and the Local Authority Municipality, Hyderabad, have appointed a special lady supervisor for girls' schools and the Karachi Municipality have appointed an additional lady superintendent. (*ii*) Scholarships have been sanctioned by the District Local Board, Larkana, for girls of cultivating classes studying in the Lower Primary standards. Some scholarships have also been sanctioned by the District Local Board, Nawabshah. (*iii*) The Karachi District Local Board have sanctioned special allowances for women teachers by way of encouragement. The District Local Board, Nawabshah, also give house rent allowance to women teachers by way of inducement to them to stay on in service. (*iv*) Some concessions in the matter of Head Masters' allowances are given to male teachers serving in girls' schools by way of encouragement. **Bengal.**—Subsequent to the last report submitted on this recommendation, the local Government have decided not to carry out any special investigation to estimate the influence of female literacy on the spread of general literacy, as the practical results from such an enquiry are unlikely to justify the expenditure involved. **United Provinces.**—No further progress has been made. Replies are still awaited from persons and bodies interested in female education, who were asked to report the results of any experiments they may have made of the nature suggested in this recommendation. The Registrar, Co-operative Societies, reports little progress in adult female education. He says that lady teachers are not available, nor are the women who attend keen on becoming literate.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education. —*contd.*	

Bihar and Orissa.—The results of the investigation made in the district of Ranchi into the connection between female literacy and the spread of general literacy show that where the mothers are literate, there is much more literacy amongst the children, both Christian and non-Christian, and where the mothers are illiterate, the children also tend to be illiterate, particularly where missionary influence is non-existent. But this survey was confined only to one district and one particular community, *viz.*, the Oraons, which is living under peculiar circumstances in a transition period. A survey much wider in scope is, therefore, necessary before the conclusion can be taken as proved.

Central Provinces.—Steps have been taken separately for the formation of a Publicity Committee. Nineteen schools were opened by local bodies in the year 1929-30 and grants aggregating to Rs. 9,267 and Rs. 11,414 were paid for them for 1929-30 and 1930-31, respectively.

Assam.—The following table shows the progress made on girls' education since the publication of the Report of the Royal Commission :—

——	No. of schools.	Number of pupils in.			
		Primary schools	Middle schools.	High schools.	Total.
1927-28 .	541	38,114	1,086	243	21,543
1929-30 .	710	50,237	1,626	327	29,150
Percentage of increase.	31	32	49	34	35

In this province, prejudice against female education is not strong, and there are clear indications of growing emancipation. The main obstacle is one of finance, and, as the above figures indicate, very rapid progress could be made if funds admitted.

Baluchistan.—Education generally is very backward in this province and particularly so in rural areas, which are inhabited by Pathans, Baluch or Brahui tribesmen, who are very conservative in their habits and ideas and are generally opposed to female education. In towns and district headquarters, there are girls' schools, which are mainly attended by Indians with a small percentage of local girls. The present number of such schools is 9 of which 5 are secondary and 4 are primary. The total number of girls under instruction in these schools, on the 31st March, 1931, was 1,424, of which 30 were local.

Delhi.—*Schools.*—There are 13 girls' primary schools in the Delhi rural area ; 10 are maintained by the District Board and 3 are under private management. The total enrolment is 575, or 228 more than last year.

Buildings.—Out of 13 girls' primary schools only three have got proper buildings.

Teachers.—There are 27 teachers in all, of whom 13 are trained.

Medical inspection.—The school children have been medically inspected twice during the year under the supervision of the health authorities. Index cards are now being kept. Parents are now taking more and more interest in following up the doctors' instructions for the treatment of their children.

Coorg.—The standard and percentage are both good and are happily still rising.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education *—contd.*	
110. Introduction of Compulsory Primary Education (paragraph 445).	**Madras.**—The suggestion regarding compulsory education has already been recognised. Under the Madras Elementary Education Act, 1920, however, as it stands at present, it is optional on the part of local bodies to introduce compulsory education. Steps are being taken to introduce compulsion wherever possible. Proposals to revise the Madras Elementary Education Act, 1920, so as to take power to enforce compulsion are separately engaging the consideration of the local Government. **Bombay.**—Surat and Broach Municipalities in Northern Division and Bombay and Bandra Municipalities in Bombay Division have introduced compulsion. The results achieved are not disappointing. In the Central Division, Poona City, Satara, Sholapur, Ahmednagar and Dhulia Municipalities and the District Local Board, West Khandesh, have introduced schemes of compulsory education. In Sind, compulsory schemes have been introduced in the Larkana Taluka and Lyari quarter in Karachi City. The Lyari quarter scheme has not so far been a success as the quarter selected is one of the most backward quarters of Karachi. Both the Boards and Government find it difficult to meet their share of expenditure in the present state of funds towards the introduction of schemes of compulsory education. **Bengal.**—Since the last report was submitted, an advance has been made in this direction by the enactment of the Bengal (Rural) Primary Education Bill in August, 1930. **United Provinces.**—The scheme of compulsory education, referred to in the previous report, made progress. The number of municipal boards which have introduced compulsory education in municipal areas rose to 36, involving an annual recurring expenditure by Government of Rs. 3,22,973. The number of district boards in whose areas compulsion is enforced rose by one. This excludes the District Board, Banda, where the notification making primary education compulsory in Banda tahsil has recently had to be cancelled, as the Board failed to make adequate provision to meet its share of the cost. The cost to Government of district Board schemes is Rs. 3,81,070 per annum recurring. The Education department has also been in correspondence with a number of district and municipal boards regarding the preparation of detailed schemes in the matter. **Burma.**—A draft Compulsory Primary Education Bill is under consideration of the local Government and will be introduced into the Legislative Council as soon as provincial finances improve. The Government have sanctioned an increased scale of pay of vernacular teachers in accordance with the recommendations of the Vernacular Education Committee and this has improved the rural schools, but embarrassed the finances of the local authorities. **Bihar and Orissa.**—Compulsory primary education is effective in one municipality (Ranchi) and in two union board areas, namely Banki in the Cuttack district and Jamhor in the Gaya district. Compulsion was tried for three years in the Gopalganj and Maharajganj union board areas in the district of Saran, but in these cases, Government, after considering the educational results of the experiment, did not consider themselves justified in continuing the special grants. Schemes for the introduction of compulsion have been received and examined for the municipalities of Chapra, Muzaffarpur and Dhanbad, but Government have not been able to find the money for the large recurring and non-recurring expenditure involved. **Central Provinces.**—Sixteen new schemes have since been sanctioned. Half a dozen more schemes are under scrutiny. **Assam.**—Schemes under the Primary Education Act, 1926, are now being prepared in considerable numbers, and one has already been sanctioned. It has become evident during examination of the schemes that a great deal of labour on the minutæ of rural schools must be undertaken if mass education is to be introduced in a form adopted to the resources both of

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education— *contd.*	
	Government, which must find two-thirds of the cost of administration, and of rural economics. Only when schemes have been put into practice will experience be gained as to the suitability of the compulsory principle for securing an adequate benefit from the primary course. The annual cost of this course has hitherto been about Rs. 5 or 6 per pupil. Under the compulsory schemes, as framed by the local bodies, it comes to very much more, varying from Rs. 12 or 13 to Rs. 28 or even as much as Rs. 68 as the ultimate commitment per additional pupil. No provision has been made for financing the two-thirds share of the cost falling on Government. It is, therefore, necessary to scrutinize the estimates very carefully, and the prospects, if the procedure outlined in the Act proves popular and the local bodies are able to enforce the cess for the purpose of producing their one-third share, must cause anxiety. Only one scheme, for a rural area, has so far been sanctioned, and this has languished.
	Baluchistan.—Modern education is of very recent growth in this province, which was formed in 1876. A few schools were opened between 1885-1890. During this period it was only possible to open primary schools in rural areas. In Quetta and other big towns and headquarter stations, there are at present very flourishing high and middle schools, but there are none in the villages. The inhabitants are Mussalmans of a very conservative type and in such circumstances it was not thought advisable to apply compulsion.
	Delhi.—Compulsory primary education for boys has been introduced in two more villages thus making a total of 6, out of 300 villages. Between 85 and 90 per cent. of male children of school-going age have been brought under instruction in these six villages.
	Coorg.—There is a fair attendance in elementary schools throughout the province and the desire to acquire at least primary education has progressed far beyond the stage requiring compulsion.
111. Formation of Co-operative Education Societies (**paragraph** 446).	**Madras.**—The local Government agree with the Agricultural Advisory Committee which considered that there was no need for co-operative societies for the purpose of securing the attendance of pupils in this Presidency. On the suggestion of Government, however, parents' societies on the model of the Punjab have been started and are working in some municipalities which have introduced compulsion.
	Bombay.—No co-operative societies have been formed so far with the object of promoting adult education.
	Adult education is however given through night schools. The number of such schools as it stood on 31st March, 1930, was 247.
	United Provinces.—Many better living societies have passed resolutions making it compulsory for the sons of members to attend school. No separate societies as recommended by the Royal Commission seem to be called for in this province.
	Bihar and Orissa.—It has not been found possible to organise co-operative educational societies in urban areas in this province. Rural credit societies are already doing a certain amount towards the spread of primary education, but no real progress can be expected without intensive propaganda, for which an adequate staff is essential. Systematic action on the lines suggested by the Royal Commission must, therefore, await the availability of funds.
	Central Provinces.—Information with regard to the societies of parents has been obtained from the Director of Public Instruction, Punjab, with a

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education— *contd.*	view to form such societies in Central Provinces and the subject is being considered by the Director of Public Instruction, in collaboration with the Registrar of Co-operative Societies. Steps are being taken to organise a society in Piparia. **Assam.**—Co-operation has as yet made but small advance in Assam. The Punjab Central system, working through co-operative societies, has not assumed a practicable aspect. The general compulsory system has yet to be put on trial, and the elaboration of alternative schemes will be due if and when it is shown to fail of its purpose. **Baluchistan.**—No such societies exist in rural areas and these are not needed in towns and headquarter stations as the schools in the latter areas are well attended.
112. Improvement of Primary Education (paragraphs 447—448).	**Madras.**—The local Government are already providing facilities for the training of teachers. The training of promising village girls and men of rural origin and upbringing with the intention that they should return to their own villages is borne in mind in making admissions to training schools. The Government do not consider that any action is at present necessary in the matter of training of the wives of teachers but they are considering the desirability of adopting the suggestions made in the interim report of the Indian Statutory Commission. No action is considered necessary on the recommendations regarding the constitution of text-book committees and teaching of agriculture in primary schools. **Bombay.**—The local authorities are trying to maintain the proportion of trained teachers laid down in the Primary Education Rules. The District Local Board, Nasik, have gone further and made a representation to be allowed to raise the percentage from 50 to 75. It is, however, hardly possible to increase the output of trained teachers owing to the expense involved at the time and the extra permanent recurring commitment. It is not possible at present to employ female teachers in boys' schools owing to lack of such teachers, and for other reasons. Efforts are, however, being made to act up to the suggestions made by the Commission as far as possible. Owing to the introduction of the V. F. Examination for girls, more qualified female teachers are becoming available and it is hoped that within a few years female teachers may become available for work in the lower classes of boys' schools. The Ahmedabad Municipality has been trying an experiment of having women teachers in mixed schools for boys and girls in the lower primary stage. The ideal of a minimum staff of two teachers in each primary school does not seem feasible in the present financial stringency. The number of one-teacher schools is however gradually decreasing. In Sind, conditions differ materially. On account of the large desert tracts some village schools cater for large areas with the result that the average number of pupils is small and hardly justifies two teachers. Attempts for the provision of suitable teachers familiar with rural life and text books for primary schools are already being made. Most of the teachers are at present drawn from amongst those familiar with rural life. The text books used in rural primary schools are the same as those used in urban primary schools and contain lessons dealing with every day objects familiar to the pupils in schools in rural areas. **Bengal.**—The action to bring into force the Bengal (Rural) Primary Education Act, 1930, is under consideration. **United Provinces.**—With a view to providing better teachers for primary schools, the admission into training institutions of candidates who have qualified themselves in agricultural knowledge has been arranged for and in connexion with the deputation of teachers for training in special courses of rural knowledge at the Allahabad Agricultural Institute, Naini, and the Agricultural School, Bulandshahr, Government have laid down that persons of rural origin and upbringing should be given preference.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education— *contd.*	The Text Book Committee has been abolished and the work of considering and recommending books has now been entrusted to the Board of Vernacular Education and its book committees. Instructions have been issued to authors and publishers regarding the lines to be followed in preparing readers for schools in rural and urban areas. Books submitted by them and approved by the Education department are being included in next year's curriculum for primary schools separately under the heads "rural" and "urban" areas. The subject of rural knowledge has been included in the curriculum for vernacular middle schools from July 1930. Agriculture is not a subject that is included in the curriculum for primary schools. **Bihar and Orissa.**—For want of funds the scheme for improving the training of teachers, referred to in the previous report, is still in abeyance. Government have summoned a conference to consider some of the important questions relating to primary education which are raised in the report of the Auxiliary Committee of the Indian Statutory Commission of 1927. The conference will also consider the question of the subjects to be included in the curriculum for primary schools. **Central Provinces.**—Revision of the syllabus of Normal School studies to suit village requirements is under consideration. The question regarding central schools was considered in the Inspectors' Conference of 1930, which was of opinion that feeder schools already exist in towns and suitable larger villages and that in this province there is little scope for the development of a system of feeder and central schools in rural areas. Recruitment of teachers from men of rural origin is being done so far as practicable. The revision of the departmental readers is under consideration. **Assam.**—Primary school teachers are trained in two Normal Schools at Government expense. The question of adding to these and introducing a new system aimed at developing a more definitely agricultural bias in the teachers has been held up by lack of funds. In general, the Assam Government are in agreement with the Commission's conclusions. They consider, however, that the view that a village which has a primary school with only one teacher might as well be without a school at all goes too far. In this province with its little villages, wide distances and poor communications, single-teacher schools must be the staple for many years to come. Nevertheless, the advantages of concentration are appreciated and provision is made accordingly in the rules under the Primary Education Act. Middle schools are necessary but fall within the province of the local boards. Satisfactory progress was made in 1929-30, the number of middle vernacular schools rising from 138 to 150. In the rules under the Assam Local Self-Government Act, a lower primary school is looked upon as an incomplete vernacular school. The main issue is again one of funds. **Baluchistan.**—Primary schools both in the urban and rural areas in this province consist of four classes and efforts are made by offering various facilities to induce parents to keep their children in the school for a full period of four years. Over and above this a fifth class is allowed in schools in rural areas where villagers are prepared to allow their children to stay an extra year in the school. For the last 18 years the Normal School, Quetta, has continued to train teachers for primary schools which are now almost all staffed with trained men mostly belonging to rural areas. As the average attendance in these schools is generally between 20 to 25, it has not been found possible to provide two teachers per school. The establishment of a central school and conversion of single teacher's schools into branch schools has not yet been tried as the villages are generally situated at great distances from one another. Most of the village schools have good school houses and teachers' quarters. **Delhi.**—*Schools.*—The number of primary schools and departments in the rural area is 105. Three new primary schools have been opened during the year. 13 are aided schools and the rest are managed by the District Board.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education— *contd.*	
	Buildings.—Out of 105 primary schools and departments, 56 have got buildings of their own and the rest are located in hired quarters or free *chaupals.* *Teachers.*—There are 188 teachers in all, of whom 172 are trained. They are mostly recruited from the rural area. There are 48 primary schools which are still under the charge of single teachers. *Medical Inspection.*—The school children have been medically inspected twice during the year under the supervision of the health authorities. Index cards are being kept. Parents are now taking more and more interest in following up the doctor's instructions for the treatment of their children. **Coorg.**—More schools and accommodation are being provided annually.
113. Adult Education (paragraph 449).	**Madras.**—The question of adult education is already receiving attention and grants are being paid from provincial funds. The Director of Public Instruction has been asked to submit more proposals for opening adult education classes through non-official agencies. **Bengal.**—The report of the Director of Public Instruction, Bengal, has been received and is under consideration by the local Government. **United Provinces.**—During the year, work in connexion with co-operative adult education societies was transferred from the Education to the Co-operative department. Government gave a grant of Rs. 5,000 for adult education and eighteen new schools were started for the purpose. It was found that, in places where such schools existed, the people were too busy thinking about the improvement of their economic condition to take part in political activities. One or two schools were, however, affected by the non-co-operation movement, mainly because the district board teachers in charge abused their position. The schools in question were closed. An experiment is being tried in the Fyzabad district of appointing local men, other than school teachers, and having ten or twelve schools within a radius of three miles, so that constant supervision at night may be practicable. It is too early to say what the results will be, but it is doubtful if such persons will be able to interest adults. They will have to confine themselves largely to the imparting of literacy and a series of lecture notes are being prepared to help and guide them. The fault, however, is not wholly with the teachers. The enthusiasm of students soon disappears and their patience is easily exhausted. Benares district reported that from 30 to 40 adults have passed through each of the older schools, but in other districts not more than five or six persons have learnt anything worth knowing and even these wish to discontinue their studies as soon as practicable. It appears that a school of this type cannot be expected to run for more than a couple of years or so, after which it must be converted into a reading club if the students are not to relapse into illiteracy. Meetings of adult education societies in the eastern and central agricultural circles were attended by agricultural assistants, who lectured on subjects of practical utility, *e.g.*, hot weather cultivation, manures and rotation of crops. Night classes at certain technical schools in urban areas continue. **Bihar and Orissa.**—On further consideration, Government have decided not to address the district boards direct for financial help to co-operative societies in the matter of adult education and it has been left to the central banks to secure such aid from the local bodies direct. During the year 1929, eleven central banks are reported to have started new night schools for adult members of societies, but no real advance can be made in this direction without intensive propaganda, for which an adequate staff is required.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education— *contd.*	
	Assam.—The local Government agree that, for the present at least, the advancement of adult education must be left to private organisation. The Sylhet Social Service League had organised a number of night schools and a proposition for Government aid to this League and to other societies seeking to open adult schools will be considered when funds are available. The League has been receiving a grant of Rs. 1,000 per annum for public health purposes. The educational authority has been assisted from discretionary grants. The following are the present figures of schools and enrolment :—

	No. of night schools.	Enrolment.
Sylhet and Cachar . . .	42	1,130
Khasi and Jaintia Hills . .	72	1,077
Total .	114	2,207

	The whole enrolment is not, however, adult. Experiments in the Assam Valley have not been so successful, and accurate figures are not available.
	Delhi.—There are 15 adult schools. Villagers, however, have not shown much enthusiasm for adult education. On account of this apathy, the schools have every now and then to be shifted from one place to another.
	Coorg.—Adult education is progressing. Some slight interest is being evinced in the training of artisans.
114. Agricultural Middle Schools (paragraphs 456—458).	**Madras.**—It has been decided not to raise the fees charged to students studying at the Agricultural Middle School, Taliparamba, the only school in the Presidency of the "Lonikalbhor" type. The above school provides a course designed to fit young men for work on the land, but confers no qualifications for employment in the department. It has never been able to obtain its full annual complement of twenty students. The District Board, Madura, is running another school for the benefit of the boys of the *Kallar* (criminal) community.
	Bombay.—It has been decided to start a vernacular agricultural school on the principle of earning while learning when funds permit. At the same time, in order to reduce the expenditure on the schools of the Loni type, arrangements are now being made to take up students who are prepared to bear their own expenses in whole or in part. Owing to financial stringency three vernacular agricultural schools of the Loni type have been closed from 1st April, 1931. There is no agricultural middle school in Sind. The recommendations of the Commission will be considered by the Chief Agricultural Officer in formulating a scheme for agricultural development of the province.
	United Provinces.—The total number of vernacular middle schools which had agricultural classes on December 31, 1930, was 33 as compared with 29 reported last year. Classes were opened at seven more schools, but had to be closed at three others for want of funds and lack of interest displayed by zamindars who had originally agreed to bear the expenses. Forty-three vernacular middle school teachers were deputed for training in the special course in agriculture at the Bulandshahr Agricultural School. They returned to their respective districts in September, 1930, to open agricultural classes in selected schools, but as they had been trained in the special subject of rural knowledge (which includes agriculture, co-operation, hygiene, irrigation and civics, subjects of direct interest to students as they will give them a true appreciation of their surroundings) which has been substituted for specialised agriculture, Government decided that they should open rural knowledge classes. Eight such classes have been opened.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education—*contd.*	A fresh batch of 55 vernacular middle school teachers was deputed in July, 1930, to the Allahabad Agricultural Institute, Naini, for training in special courses of rural knowledge and 30 teachers went in October, 1930, to the Bulandshahr Agricultural School for the same course. On completion of their training, these teachers will return to their districts to open rural knowledge classes from July and October, 1931, respectively. Funds have been asked for to provide for the training of 120 teachers in 1931. To stimulate boys working on farms attached to vernacular middle schools a proposal to divide profits among the boys is being considered. Another school of the Bulandshahr type which is being opened at Gorakhpur will specialise in the training of teachers in rural knowledge. The buildings are complete and a Principal has been appointed. It is expected to start regular work in July, 1931. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. The number of such schools is now 143; 58 equipped with farms and 64 with garden plots. Eight high schools centres are also equipped with farms of 5 to 9 acres each. **Burma.**—There is one school of the type referred to in these recommendations in Burma, *viz.*, the Agricultural School run by the American Baptist Mission at Pyinmana. Government has spent a substantial amount of money on this school and sanctioned an annual grant of Rs. 22.000 for five years from the 1st April, 1927. It has been decided (1) to postpone the decision regarding the closing of the school until 1931, when a Committee will be set up to go into the past working of the school and to make recommendations for its future management and (2) not to open in the meantime any further schools of this type by means of Government's contributions and assistance. **Bihar and Orissa.**—With regard to the teaching of agriculture in middle schools, an experiment has been tried of attaching school gardens to five such schools. Favourable reports regarding the success of the experiment have been received from two schools, one has since become a high school and in the other two a proper beginning has not yet been made. **Assam.**—The local Government do not feel themselves yet in a position to experiment with any type of agricultural middle school, nor has any demand for such schools yet arisen. The recognised course does all that is possible to give the middle vernacular school a friendly and intelligent outlook on country life, and the introduction of agriculture as an option is permitted. **North-West Frontier Province.**—A proposal is under consideration for teaching agriculture in selected vernacular middle schools on the lines followed in the Punjab. **Baluchistan.**—There are two middle schools in which agriculture forms a part of the school curriculum. Both have a farm attached to them where the boys are taught the practical use of improved agricultural implements. These have attracted many local boys and the surrounding *zamindars* also visit the farms and sometimes consult the agricultural teacher about their crops, seeds, etc. In compliance with the persistent demands of parents, English is taught in both schools. **Delhi.**—Out of seven middle schools in the rural area, there is only one in which agriculture is being taught. This is under the control of the District Board. An agricultural farm has also been started there for practical work.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education— *contd.*	
115. Addition of Course in Agriculture to curriculum of High Schools in Rural Areas (paragraph 461).	**Madras.**—The matter is under the consideration of the local Government.
	Bengal.—A revised curriculum for secondary schools in Bengal, including a course in agriculture, has been sanctioned and it has come into operation from 1st January, 1931.
	United Provinces.—No further progress has been made. After considering the replies of Divisional Inspectors of Schools, who were last year asked to report regarding the high schools specially suited for the teaching of agriculture, this Government are of opinion that it would be preferable to establish separate intermediate colleges in agriculture rather than to teach agriculture in high schools.
	Burma.—The local Government are unable to accept this recommendation.
	Central Provinces.—The local Education Standing Committee has rejected the proposal to teach agricultural botany in certain High Schools.
	Assam.—The provision of practical and theoretical instruction in agriculture in high schools must necessarily offer difficulties in Assam since there is no agricultural college in the province and teachers would not be available to impart such instruction even were it deemed desirable. Until such time as the regulations of the University of Calcutta require the provision of an agricultural or technical course in the high schools it is not to be supposed that pupils will be diverted from the Matriculation examination, which is regarded as the avenue to employment and the purpose of high school life, to agriculture. The local Government feel that more evidence will be required that a demand exists for such training and more assurance that the pupils who avail themselves of it will emerge equipped in other respects for a useful and profitable livelihood before they can venture on a decision to change the curriculum in this way.
	Baluchistan.—As the high schools in this Province are affiliated to the Punjab University, which fixes the courses in the various subjects, it rests with that body to make the change recommended.
	Delhi.—Out of the three high schools in the rural area, there is only one private aided school in which agriculture forms part of the curriculum.
116. Technical Education (paragraph 462).	**Madras.**—The Industries department is taking necessary action in the matter of dyeing and manufacture of oils and soaps. Dyeing forms part of the training imparted at the textile institute where students are taught improved methods of dyeing and cloth printing. Besides an itinerant dyeing party goes from place to place demonstrating to weavers improved methods of dyeing. At the Government soap factory at Calicut, apprentices are instructed in the latest methods of soap manufacture. The superintendent of the institute visits from time to time private soap factories and explains to the manufacturers the evils of adulteration and the means of avoiding them.
	United Provinces.—The scheme for developing the sugar department at the Harcourt Butler Technological Institute, Cawnpore, was facilitated by a grant of Rs. 1,25,000 from the Imperial Council of Agricultural Research towards the cost of the plant required and of Rs. 20,000 per annum for five years towards the maintenance of the sugar department. The Imperial Council has appointed a Sugar Technologist and posted him to Cawnpore. He has been in England during the year and advised this Government on the specifications and purchase of the new machinery, which will be a complete small scale plant of the most modern type, capable of crushing one ton of cane per hour.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education— *contd.*	
	Work in the oil, leather and general chemistry departments of the institute continued on the same lines as before. A small soap-making plant and a paints plant were added to the equipment of the oil department.
	Assam.—The local Government agree in principle. They are not financially in a position to undertake the management of a technological institute. The State technological scholarship and sundry stipends are, however, granted with a view to the prospect of employment in the province. Technical education is at present confined to cottage industries, and is given in the Weaving Institute, Gauhati, the Weaving School, Shillong, and the Weaving section of the Sylhet Technical School and by peripatetic weaving parties, of which there are now four. The two plains and two hills technical schools are at present giving a training in ordinary handicrafts. Government intend carefully to consider the kind of training needed, the best mode of securing it and the class of pupil that can be attracted. The matter is already under examination. Dyeing is being taught, and lac demonstrations have also been given in two districts, the teachers having been given a training at the Lac Research Institute, Nankum, and elsewhere.
	Baluchistan.—No technical education is provided in any of the schools in the province.
117. Qualifications for admission to Agricultural Colleges (paragraph 471).	**Bombay.**—No action has been taken, but the whole subject of agricultural education is being reviewed by a Departmental Committee.
	There is no agricultural college in Sind. Scholarships at the Poona Agricultural College are awarded to suitable Sindhi students annually by the Commissioner in Sind. The question of sending students to the Lyallpur Agricultural College from Sind is receiving the attention of the Chief Agricultural Officer.
	United Provinces.—The qualifications for admission to the Agricultural College, Cawnpore, have not been altered consequent on its affiliation to the Agra University, with effect from July, 1930, except that the Board of High School and Intermediate Education have made a change permitting candidates for admission, who have passed the Intermediate Examination with chemistry and biology, to appear for the Intermediate Examination in agriculture after one year instead of two years. The duration of the degree course in agriculture is thus reduced to three years for such candidates.
	Punjab.—The action taken on this recommendation has already been mentioned in the previous report. No alteration has been made in the former standard.
	Burma.—The Director of Agriculture has submitted his report and recommended the adoption of the intermediate standard as proposed by the Commission but a two-year instead of a three-year course with further post-graduate training on the farms or in the laboratories of the department. The Government will consider the report in due course.
	Assam.—The local Government agree that the I. Sc. should be made an essential qualification for admission to an agricultural college.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education— *contd.*	
118. Teaching of Agricultural Economics and Farm Management at Agricultural Colleges (paragraph 472).	**Madras.**—The University of Madras to which the Agricultural College, Coimbatore, is affiliated, has appointed a committee to revise the curriculum. **Bombay.**—The necessary facilities exist in this Presidency and an officer of the Agricultural department has been granted study leave for receiving further training in England in this branch of work. **United Provinces.**—Provision for the teaching of agricultural economics will be made when funds are available. Farm management will be taught at the Gorakhpur Agricultural School; it is already taught at the Bulandshahr Agricultural School. **Burma.**—The matter is still under the consideration of the local Government. **Assam.**—The local Government agree but are not closely concerned as there is no agricultural college in the province.
119. Revision of Short Courses given at certain Agricultural Colleges (paragraphs 473—474).	**Bombay.**—*The College curriculum.*—The part to be played by departmental or private farms in post-graduate work will be considered. *The two years' short course.*—When consideration is given to the revision of the degree and diploma courses, the short course will also be reviewed. **United Provinces.**—The question of providing at the Gorakhpur Agricultural School short courses for fieldmen, engine drivers and gardeners, similar to the courses provided at the Bulandshahr Agricultural School, is under consideration. **Bihar and Orissa.**—The recommendation has no application to Bihar and Orissa, which has no agricultural college. **Central Provinces.**—Short courses in dairying and agricultural machinery have been provided. **Assam.**—The local Government agree but are not closely concerned as there is no agricultural college in the province.
120. The Mandalay Agricultural College in Burma (paragraph 475).	**Burma.**—The recommendations made are still under the consideration of the local Government.
121. Provision of Facilities to enable Passed Students of Agricultural Colleges to obtain Practical Experience (paragraph 476).	**Madras.**—The local Agricultural department has hitherto been absorbing many of the passed students. The question of providing facilities to obtain practical experience to passed students who want to return to their land has not yet arisen. **Bombay.**—The course in practical agricultural work given at the Agricultural College, Poona, aims at this object. In addition to this, the necessary facilities in this connection already exist in the Presidency. In Sind, the question is receiving the attention of the Chief Agricultural Officer.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education— *contd.*	
	United Provinces.—As reported last year, this is to some extent done on the departmental farms.
	Assam.—It has now been decided that, before going to a college, a student selected for scholarship should be given six months' training at a farm and that, after the college course, he should again be given a six months' practical course with a stipend before being appointed to service.
122. Organization of Agricultural Colleges (paragraphs 477—479).	**Bombay.**—The question of the appointment of a full-time Principal of the Poona Agricultural College has been dropped for the present owing to financial stringency. The other recommendations are receiving attention and care is also being taken, in making direct appointments, to select distinguished graduates in science of Indian, American and British Universities. In Sind, these recommendations will receive consideration in any scheme for agricultural development there. **United Provinces.**—The affiliation of the Agricultural College, Cawnpore to the Agra University has brought in its train costly proposals of re-organisation, which can only be adopted gradually as funds become available. The constitution of the new Provincial Agricultural Service, Class I, is still under consideration. **Assam.**—The province of Assam is not concerned with these recommendations.
123. Openings for Passed Students of Agricultural Colleges in other departments (paragraph 481).	**Bombay.**—The Agricultural degree has been placed on the same level as a degree in Arts or Science in making appointments in other Departments. **Bengal.**—The principle is accepted by the local Government. **United Provinces.**—Passed students of the Agricultural College, Cawnpore, are eligible for appointment in other departments. The question of reserving a certain number of posts for them in other departments is still under consideration. **Punjab.**—The Irrigation department recruits two *Zilladars* annually from amongst passed students of the Punjab Agricultural College. A proposal to recruit passed students to a special cadre for Courts of Wards is under consideration. **Burma.**—The matter is still under the consideration of the local Government. **Assam.**—The eligibility of a holder of an Agricultural degree from a recognized university for appointment to the Assam Junior Civil Service has been recognized by the Government.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XV.—Education— *concld*	
124. Agricultural Colleges for Bengal and Bihar and Orissa (paragraph 482).	**Bihar and Orissa.**—The question of the re-establishment of an agricultural college for the province was fully considered and a senior officer of the department was placed on deputation for three months to work out details. A comprehensive report has been prepared and published. Action on it will be taken when the financial condition of the province improves. In the meantime, four scholarships have been instituted to be awarded to suitable I.Sc. passed candidates of this province for prosecuting agricultural studies at the Nagpur and Cawnpore Agricultural Colleges.
CHAPTER XVI.—Rural Industries and Labour.	
125. Government Assistance in developing Manufacture of Agricultural Implements and in training Village Artisans to manage and repair improved types of Machinery (paragraphs 491 and 494).	**Madras.**—Owing to financial stringency, the local Government had to defer the following proposals :— (1) Opening special classes in Government industrial schools to train rural youths of artisan classes in implement manufacture. (2) Encouragement of aided industrial schools by the grant-in-aid to provide regular courses of instruction to village artisans in the care and maintenance of oil-engines and pumping plants. **Bombay.**—No action has yet been taken, but the Agricultural Engineer is in close touch with the Cooper Engineering Works, Satara. This firm is prepared to manufacture implements in accordance with designs certified by the Agricultural Engineer. Action is also being taken to encourage village artisans to manufacture simple articles like cotton uprooters and water-lifts. In Sind, no action has yet been taken. **Bengal.**—A scheme for the training of apprentices at the workshop of the Agricultural Engineer, Dacca, has been approved and will be in operation when certain additional staff for his workshop, which has been administratively approved, is sanctioned. **United Provinces.**—Tests were made by the Industries department of a hand chaff-cutter purchased from Bombay with the idea of getting some local firm to take up its manufacture, but the machine proved unsatisfactory. Tests with a ropetwisting machine procured from Bihar also gave poor results. Shares for ploughs and harrows made last year by a firm to which assistance was given by the Industries department were put on the market. They were sufficiently cheap but not equal to the imported ones. A short course for mechanics and engine drivers exists at the Bulandshahr Agricultural School. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. The special courses of instruction, referred to therein, continue. **Burma.**—The Agricultural Engineer will be instructed to institute short courses for training artisans in the management and repairs of improved types of machinery. **Bihar and Orissa.**—The improved artisan training scheme was sanctioned by the Government and has been introduced in all the four Government technical institutions at Patna, Muzaffarpur, Ranchi and Cuttack. With the aim of teaching village artisans, the construction and repair of agricultural implements, a carpentry school is going to be started very shortly at Kathikund in the district of the Santal Parganas and the Industries department is considering the question of giving a grant to the institution.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XVI.—Rural Industries and Labour—*contd.*	
	Central Provinces.—The Agricultural department supplies a practical course of instruction in the management of tractors and small power plants.
	Assam.—The question how the technical school training can best be adapted to provision for encouraging the local manufacture and repair of approved implements is engaging the attention of the Director of Industries. Loans are given to enable applicants, passed pupils and others to start small industrial enterprises.
	Delhi.—With a view to bringing home to the agricultural classes the possibilities of organization and development of rural industries, such as poultry rearing, lac cultivation, cotton weaving, durree-making, rope-making, mat-weaving, *niwar*-making, textile printing, oil-pressing and soap-making, several gatherings were addressed by the Industrial Surveyor and the Revenue Assistant during the year under review. The Industrial Surveyor's office also organised several demonstrations of the use of improved appliances and the methods of production involved in *munj*-spinning, textile printing and rope-making. The demand for information relating to tools and appliances, costs, production, supply of raw materials and marketing of finished products, as well as requests for assistance in the way of demonstrations and practical training in different industries, from the rural community has continued to increase during the year. The industrial laboratory was equipped with modern appliances, such as rope-making machines, *munj*-spinning wheel, chaff-cutters, tube-well handpump and equipment for textile printing and soap-making, suitable for the rural worker in order to meet the growing demand for ocular demonstrations. During the year under review, Government was approached for the extension of the Punjab Industrial Loans Act to the province ; the matter is still under consideration. With the application of the Act to Delhi, it is hoped to help industries generally. There are private enterprises in Delhi engaged in the manufacture of agricultural implements. The five years' programme for technical and industrial education in Delhi province is under preparation and it may be possible to provide for the grant of stipends for the youths of the rural classes to enable them to attend engineering concerns for purposes of training in implement manufacture as well as for the development of rural industries generally.
	Coorg.—The local Administration is running schools to train young men in weaving and carpentry and other small industries and, by way of inducement, has been granting scholarships to such of them as are willing to undergo a full course of training.
126. Development of Poultry Industry (paragraph 497).	**Madras.**—An officer of the Agricultural department has been deputed to undergo training in poultry work at Lucknow. There is one co-operative society for egg production and sale, but it has not done any appreciable work so far.
	Bombay.—A scheme for the better equipment of the Central Poultry Farm could not be sanctioned owing to financial stringency. But work is proceeding with the existing facilities in the Department. Certain breeds are being bred and studied and pedigree male birds are being distributed in villages. Eggs and chicks of recommended strains are being supplied to selected villages on cheap terms. The Department is also co-operating in the annual Poultry Show organised under the auspices of the Bombay Presidency Poultry Association. The Loni Agricultural School is giving special attention to poultry farming. In Sind, no action has been taken but the matter will be considered in any scheme of agricultural development in future.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XVI.—Rural Industries and Labour—*contd.*	
	United Provinces.—The United Provinces Poultry Association continued its work. A short term foreign scholarship was given to a scholar for training in poultry farming. He has lately returned to India. Little progress was made with the introduction of poultry farming in co-operative societies. Better breeds were obtained and supplied to villagers in five or six districts. Efforts were made to organise weekly markets in selected places for the purchase of eggs and three societies for this purpose have recently been organised in the Etah district.
	Punjab.—The action taken on this recommendation has already been mentioned in the previous report. The work of the poultry section, referred to therein, continues.
	Bihar and Orissa.—A small poultry farm has been sanctioned by Government and preliminary work has begun at the Kanke farm (Ranchi). An overseer specially trained in poultry has been appointed and the advice of the Secretary of the United Provinces Poultry Association obtained regarding the most suitable breeds of poultry for rearing.
	Assam.—An experiment was begun at the Upper Shillong Farm in 1928-29. It was at first unfortunate owing to a widespread outbreak of disease but is being pursued and now promises better. The work has been placed under the Livestock Expert, who also reports on applications for poultry breeding loans. Enquiries have been made as to the history of passed stipend holders and persons to whom loans have been given, and it is hoped that these efforts will now be made and watched more systematically than before. The cost of poultry breeding experiment in 1929-30 was Rs. 663.
	Delhi.—There are, undoubtedly, opportunities for the development of the poultry industry in this province, owing to a growing local demand for eggs and other poultry products. But, unfortunately, religious prejudices against the keeping of poultry exist in the rural area among the Hindu communities. There is one established poultry farm at Nizamuddin which did a fair amount of business during the cold weather of 1930-31. It has closed down during the summer due to unfavourable weather conditions. A second poultry farm has started work on a site between Purana-Qila and Nizamuddin, but the farm has not actually started business. A Government stipendiary student from this province who completed his course of training in the United Provinces Poultry Association's Farm, Lucknow, was in communication with the Delhi Poultry Farm for the establishment of a modern poultry farm but no progress has been made for want of a suitable site. In the Kingsway area, there is a poultry farm which came into existence some years ago and is said to be doing good business with the hotels and other places in the Civil Station. The starting of a small modern poultry farm at the rural school at Dhakka village in Kingsway was under contemplation at the end of the year.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XVI.—Rural Industries and Labour—*contd.*	
127. Organization of Village Artisans on a Co-operative basis (paragraph 501).	**Madras.**—At present the following societies are helping the artisan classes in the villages :—

(1) Coir workers' societies	11
(2) Weavers' societies	134
(3) Cottage industries	1
(4) Basket workers	2
(5) Match workers	1
(6) Bells and brass metal workers	3
(7) Tailors	1
(8) Labour contract societies	59
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The Government have not sanctioned any advances to these societies but have sanctioned an inspector on Rs. 40 per mensem for a year to assist the development of *kora* mat industry to be undertaken by a society of Mappillas (Moplahs).

United Provinces.—Attempt to organise the wood-carvers of Saharanpur and the scissors-makers of Meerut were not successful.

It is difficult to organise village artisans as there are usually only one or two in a village. A beginning is being made with weavers in or near towns and with leather-workers in places where there are large numbers of them.

Improvements were effected in the methods of tanning in two societies in the Bijnor district and a number of fly shuttle looms were introduced among weavers during the year.

Bihar and Orissa.—An industrial co-operative society, known as the *Purda*-weaving society, has been started in the district of Patna for weaving hand-woven textiles, chiefly for foreign markets. Hand-woven goods valued at about Rs. 90,000 were sold during 1929-30 through the London agent.

Assam.—In some places, particularly Karimganj, credit societies have been successfully established among weavers and mat-makers. There are at present no non-credit societies, but the Registrar hopes to establish some in the spheres of weaving and sericulture.

128. Government Assistance to Industry (paragraph 504).

Madras.—The Industries department is taking steps for the development of agricultural industries such as (1) rice milling, (2) extraction of oil, (3) sugarcane crushing and (4) fibre extraction as shown below :—

(1) *Oil milling.*—The department has designed a power-driven *chekku* mill which is designed to run at a speed of 9 r.p.m. and to take ten to sixteen measures of *gingelly* per charge. It absorbs 2 h.p. and can be installed either as a single unit or in batteries of several units. Where a power plant already exists for pumping water, rice milling or other purpose, one or two *chekkus* can be installed as a subsidiary industry without extra power charge. If desired, a battery of four or more could be installed. The percentage of extraction of *gingelly* seed is 40 to 44 per cent. and it varies with other seeds from 37 to 62. A *chekku* costs Rs. 400. The cost of crushing one ton of *gingelly* seeds is about Rs. 23 against Rs. 48 in the bullock-driven *chekku*. The *chekku* has become popular so that during the year ten were sold, making a total of 39 up to date.

(2) *Sugarcane crushing.*—The department is in possession of six sugarcane mills, three with engines and three without engines. These are lent to co-operative societies who are greatly benefitted by their use.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XVI.—Rural Industries and Labour—*contd.*	(3) *Fibre extraction.* The department has conducted experiments on the proper method of retting coir. The results of the experiments are being demonstrated to the people in some of the villages in the Tanjore district. **United Provinces.**—Experiments were undertaken at the Harcourt Butler Technological Institute, Cawnpore, in the following matters connected with agriculture :— (*a*) growing of *tung* oil trees and *mahua* trees and improving the oil yield of castor seed, linseed and *til* seed ; (*b*) recovery of commercial fibres from linseed straw after the seed has been harvested ; (*c*) improving the methods of retting *sann* hemp ; (*d*) softening of hard jute ends for use in a jute mill. These were successful. Silk cloth manufactured by the co-operative societies at Sandila was introduced into the Lucknow market through the Divisional Superintendent of Industries, Lucknow. The Excise Department sanctioned the issue of specially denatured spirit on favourable terms for the manufacture of transparent soaps. Special rules have been framed for the issue of licences for such spirits to manufacturers of transparent soaps in the province. **Central Provinces.**—Notice of a non-official Bill for State Aid to Industries has been received. The question whether Government should introduce such a bill is under consideration. **Assam.**—The following are the figures of progress :—

	1926-27.	1929-30.
	Rs.	Rs.
Loans paid	6,400	36,850
Expenditure on industrial development	900	750
Expenditure on industrial education .	1,14,949	1,29,671
Expenditure on sericulture . . .	13,773	21,917

	The views of the Commission are generally accepted. The question of framing a State Aid to Industries Bill has been considered, but set aside as premature. Government have not at present the funds to investigate new forms of industry or give technological instruction. Rs. 2,466 were spent on stipends for studying minor industries in other provinces in 1929-30. The conditions on which loans can be given and the rate of interest have been thoroughly reviewed, in view of the serious disclosures of misapplication that have recently been made, and the rise in the rate of Government borrowing. **North-West Frontier Province.**—An industrial investigator was appointed to carry out a general survey of the industries of this province. He completed the survey and submitted a report in January, 1929. The Director of Industries, Punjab, was recently consulted on his recommendations and further communication from him is awaited. Any proposals made, however, must involve fresh expenditure, funds for which can only be provided by the Government of India.
129. Qualifications of Directors of Industries (paragraph 505).	**United Provinces.**—A member of the Indian Civil Service has been appointed to the post of Director of Industries.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XVI.—Rural Industries and Labour—*contd.*	**Assam.**—The Agriculture department is being separated and an Indian Civil Service Officer of nine years' service, a native of the province, has been appointed Registrar, Co-operative Societies, and Director of Industries, with effect from 24th November, 1930.
130. Encouragement of Migration (paragraph 509).	**United Provinces.**—The recommendations of the Royal Commission on Labour on the matter are awaited. **Central Provinces.**—At the request of the Assam Labour Board, the prohibition on recruitment by persons other than garden *sardars* duly accredited to local agents was withdrawn for six months from the districts of Jubbulpore, Saugor and Damoh so as to facilitate recruitment of labour to tea districts in Assam. **Assam.**—For a number of years migration from Eastern Bengal to the Assam Valley has been very considerable and has indeed formed a serious problem in view of the complaints that the Assamese population are being driven out. The question of regulating immigration was considered by a conference of executive officers in 1928. It was decided :— (1) That immigration from Bengal be encouraged. (2) That three colonisation schemes be started at Nowgong, Barpeta and Mangaldai. As regards these schemes :— (*a*) The area covers about 155,000 bighas (approximately, 51,667 acres) of land. Rs. 25 per bigha is charged for premium, and is taken in instalments lasting over five years. If all the land be taken up, Government would get some Rs. 38,84,000 non-recurring in premium and recurring land revenue of about Rs. 1,50,000 per annum. (*b*) The expenditure involved is very difficult to estimate. Up to date the non-recurring expenditure is roughly as follows :—

	Rs.
Rs. 3, 500 for each scheme for quarters and barracks	10,500
Rs. 12,000 for roads in Nowgong . . .	12,000
Total	22,500

The recurring expenditure, on the present scale, may be reckoned as follows :—

For one sub-deputy collector, his staff, 4 peons, travelling allowance and contingencies, approximately Rs. 7,000 per scheme or for the three areas Rs. 21,000.

In the future, considerable non-recurring expenditure will doubtless be incurred in providing roads, schools, hospitals, water-supply, etc. This cannot be accurately estimated.

(3) Another scheme for North Lakhimpur will probably be started in the comparatively near future—not, however, in 1931-32.

North-West Frontier Province.—In the opinion of the local Administration, the existing qualities of enterprise and hardihood possessed by the residents of this province do not demand any special action in this direction.

Delhi.—The seasonal occupations in Delhi, such as iron foundries engaged in the manufacture of sugarcane crushers and ice-production, draw a part of their labour from the neighbouring villages and form an agency for part-time employment. The building trades, brick-kiln and road making, employ unskilled casual labour from the rural population. A part of the surplus agricultural labour is absorbed in the local industrial

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XVI.—Rural Industries and Labour.— *concld.*	enterprises. A scheme for the development of leather-tanning and leather-working industries received the approval of the local Administration during the year under review and with the funds being made available it is hoped it will encourage the diversion of surplus agricultural labour, mostly from the Chamar community, to this industrial pursuit.
CHAPTER XVII.—Horticulture and Plantations.	
131. Development of the Cultivation of Fruit and Vegetables with special reference to Picking, Packing, Transport and the use of suitable Containers, the establishment of Regulated Markets and improvement of Marketing Conditions generally (paragraphs 514—517).	**Bombay.**—A number of experiments have been conducted to improve the methods of packing mango fruits, by employing suitable wooden containers. As a result of these observations, it was established that the fruits packed in wooden containers escaped damage and injury in transit. Moreover, when thus packed, the fruit fetched an additional price of as much as two to six rupees per hundred. These advantages have been brought to the notice of the growers by propaganda and through a leaflet published under the heading " Bamboo baskets *versus* wooden cases for packing mangoes ". Experiments in grading mangoes have shown that it pays to do so. Trial consignments of mangoes to Europe have arrived in good condition when carried in the cool-room of ships, where the temperature ranges from 40° to 50° F. A research scheme for the full investigation of the problems connected with the export of mangoes to overseas markets has been prepared for the consideration of the Imperial Council of Agricultural Research. Improved strains of guava have been examined by the Crawford Market authorities at Bombay, and the report shows that they are a striking improvement upon the bazaar sample. Similarly the " Kabuli " pomegranate fruit has been examined and found to be a great improvement upon the local types as it has soft seed, abundant juice and agreeable taste. Hitherto very little work has been done on the improvement of vegetables. A grant for vegetable research has recently been obtained from the Trustees of the Sir Sassoon David Trust Fund. The Professor of Agriculture at the Poona College of Agriculture is making a special study of the technical and economic aspects of market gardening. One or two shows have been organised to bring home to the trade the special merits of certain varieties of fruit. In Sind, the Mirpurkhas Fruit Farm has been developed solely as a fruit farm and a special Horticultural Officer has been appointed. The formation of commercial plantations, the production of reliable fruit stock and the training of skilled *malies* are being taken up as the main items of work at this centre. **United Provinces.**—No special work was done during the year, but Government have placed the services of the expert gardening staff at the disposal of the public to advise on horticultural matters, specially fruit growing. The lessee of the Chaubattia orchard, referred to in the previous report, has applied for a loan to extend his jam-making business and to introduce the fruit-preserving industry. The question of the loan is being considered. The Principal of the Harcourt Butler Technological Institute, Cawnpore, has instructed the lessee in the use of the fruit-preserving machinery which has been lying unused at the orchard. **Punjab.**—The action taken on this recommedation has already been mentioned in the previous report. **Central Provinces.**—The action taken on this recommendation has already been mentioned in the report for the year 1929. A preliminary study of marketing of oranges has been made. **Assam.**—The possibility of growing certain varieties of deciduous fruits successfully on the hills of Assam has now been demonstrated to a considerable extent. Oranges also do particularly well in parts of the plains,

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XVII.—Horticulture and Plantations—*contd.*	
	and reach distant markets, such as Akyab, Benares and Calcutta. The culture of fruit is, however, capable of much development, and a great deal requires to be done in the selection of stocks and varieties, manurial experiments, picking, packing, transport and marketing arrangements. A scheme has been worked out for the development of fruit culture under the Economic Botanist who has been trained in Horticulture in America. The cost of the scheme for five years amounts to Rs. 80,000 in all. It involves departmental management of the La-Chaumiere Fruit Garden, the expansion of gardens at Khanapara and Haflong, the appointment of an extra Fruit Inspector and certain subordinate staff. It is hoped to secure assistance from the Imperial Council of Agricultural Research. The Agricultural department has achieved considerable success in introducing vegetable seeds. The value of seeds sold is indicated below :—
	1926-27. — Rs. 3,984 — 1929-30. — Rs. 5,204
	North-West Frontier Province.—Much attention is being paid in the Peshawar district to the production and export of fruit. The trade is big and well-established. In the leading markets of India the demand for the fruits of the province far exceeds the supply. At the Government Farm, Tarnab, many men are trained in modern methods of growing and marketing fruit, and every year the farm nurseries send out at least 30,000 budded trees.
132. Work of Agricultural Departments in the Selection and Classification of Root Stocks (paragraph 518).	**Bombay.**—The local Agricultural department is carrying on the work of the selection and classification of root stocks. The mango and the citrus stocks have so far been the subject of study. Experimental work is also in progress at the Mirpurkhas Fruit Farm in Sind. **United Provinces.**—Various experiments are being made at Saharanpur and Chaubattia in connexion with foreign stocks of apple, plum, cherry, pears, oranges and loquats. **Punjab.**—Investigations are in progress. **Bihar and Orissa.**—*Vide* remarks against item 135 below. **Assam.**—A number of trials on indigenous and important stocks has been satisfactorily carried out. Budding of oranges on different stock has been carried out by the department at Khanapara and Haflong. These operations will be continued and expanded if the scheme mentioned in item 131 can be financed. **North-West Frontier Province.**—*Vide* remarks against item 5. **Baluchistan.**—The Agricultural Officer is devoting attention to this matter.
133. Experimental work by Agricultural Departments on Fruit and Vegetables (paragraph 519).	**Madras.**—A scheme has been submitted by the local Government to the Imperial Council of Agricultural Research for the establishment of two fruit research stations, one in the hills and the other in the plains. **Bombay.**—The proposals for the provision of an up-to-date laboratory for the Horticulturist to Government could not be proceeded with owing to financial stringency.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XVII.—Horticulture and Plantations—*contd.*	The conversion of the Ganeshkhind Botanical Gardens from a pleasure-ground into a first class Horticultural Experimental Station is proceeding as rapidly as the very limited funds available permit. The experimental work on vegetables and fruits includes the following :— 1. The improvement of indigenous fruits and vegetables by the process of breeding and selection. 2. Improvement of crops by cultural methods such as improved methods of irrigation. 3. Investigations pertaining to nursery problems such as the study of new stocks, budding of the mango, propagation of citrus and other fruit crops by cuttings. 4. Attempts to increase the yield of crops by various horticultural methods such as notching, root exposure and pruning. 5. Introduction of new fruits and vegetable crops by the import of foreign strains and variety trials. Thus Washington Papaya, Naval Orange, Italian Lemon, Bonnie Best Tomato and Hungarian Yellow Capsicum have been successfully introduced into the Presidency. Experimental work on fruit culture, especially on citrus varieties and vines, is being extended at the Mirpurkhas Fruit Farm. A programme for the production of large number of reliable fruit stocks for cultivation in the Barrage areas of Sind has been laid down and is being put into effect. **United Provinces.**—Experiments are in progress to ascertain the effect of brick-kiln smoke on mango trees. Trials with budding of loquats have been successful and propagation by this method has been adopted by an enterprising nursery. The mosaic disease of potato has been largely brought under control at the Potato Research Station, Farrukhabad. **Bihar and Orissa.**—*Vide* remarks against item 135. **Assam.**—*Vide* remarks against items 131 and 132. **North-West Frontier Province.**—A considerable part of the time and money of the Agricultural department is devoted to fruit growing. **Baluchistan.**—Experiments in the grafting and growing of fruit trees are conducted by the Agricultural Officer at the Experimental Fruit Farm, Quetta. **Coorg.**—An annual grant up to a limit of Rs. 2,500 has been made to the United Planters' Association of Southern India, to assist them in their scheme for the development of the coffee planting industry. The scientific work of the association was carried on at Coimbatore and Siddapur. Coorg has participated in a scheme drawn up by the Government of Madras for the investigation of spike disease in sandalwood. The investigation has been conducted at the Indian Institute of Science at Bangalore. A horticultural show organised by private persons was encouraged by the Government.
134. Recording of Marketing Information by Marketing Officers and Agricultural Departments (paragraph 519).	**Bombay.**—No Marketing Officer has yet been appointed in the Agricultural department, but part of the preliminary work to be undertaken under the vegetable research scheme includes a careful survey of the markets and market requirements. No action has yet been taken in Sind.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XVII.—Horticulture and Plantations—*contd.*	
	United Provinces.—Nothing has been done in this direction. The services of an officer of the department have been lent to the Imperial Council of Agricultural Research for work in connexion with the marketing of Indian hemp. **Central Provinces.**—A Deputy Director of Agriculture for Economics and marketing has been appointed. **Assam.**—The local agricultural department has at present no officers fitted for carrying out marketing enquiries.
135. Encouragement of Private Enterprise in establishing Nurseries for Orchard Stock and production of Vegetable Seeds (paragraph 519).	**Bombay.**—Government help the Agri-Horticultural Society of Western India which has undertaken the management of the Empress and Bund Gardens, Poona, by subsidizing the deficit on working to the extent of Rs. 3,000 per annum. Similarly it also forms part of the duty of the Horticulturist to Government to inspect private nurseries and to encourage the starting of new ones. This officer has taken full advantage of the Presidency Agricultural Shows, held at Poona and Ahmedabad, to encourage and organize the nursery industry of the Presidency. Among his clientele there are several successful nurserymen in the Konkan and Deccan. In Sind, arrangements have been completed for obtaining the co-operation of private growers in the production of reliable fruit stock for extension and distribution in the Barrage area. **United Provinces.**—No special efforts have been made, nor do they seem necessary. Private nurseries already exist throughout the province and they are encouraged by fixing the prices of the produce of Government gardens at a level high enough to avoid underselling. The result is decreased sales at Government gardens and the establishment of new private nurseries. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. **Bihar and Orissa.**—The supply of mango grafts of recognised varieties to the public was continued from the Botanical Section at Sabour. The horticultural overseer has started work at the Netarhat farm in the planting of fruit trees and raising of hardy stocks for grafts. **Assam.**—This is being followed so far as practicable. It was made a condition of the lease of the La-Chaumiere Garden that grafts should be made available for issue to local horticulturists, and much use has been made of the concession. Since 1922-23, and up to 1930, the following grafts have been issued :—

	Nos.
Apple	1,280
Pear	625
Peach	113
Plum	150
Apricot	2
Cherry	4

Grafts of oranges, pine-apple suckers, etc., are also issued on sale through the seed depots.

North-West Frontier Province.—Within the past few years several fruit-growers have opened small nurseries.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XVII.—Horticulture and Plantations—*concld.*	
	Baluchistan.—This is being done so far as fruit trees are concerned. **Delhi.**—Nurserymen are advised to improve their nurseries by stocking improved varieties of fruit plants and vegetable seeds recommended by the Agricultural department.
CHAPTER XVIII.—Statistics.	
136. Preparation of Forecasts of Yield in the Central Provinces and Burma (paragraph 525).	**Bihar and Orissa.**—The recommendation for issuing crop forecasts in leaflet form and translating them into the vernaculars of the province was considered by the local Government. The additional cost involved in translating and printing the forecasts is estimated at Rs. 8,000 which appears to be excessive and out of all proportion to the advantages likely to be gained. The proposal has, therefore, been dropped. **Central Provinces.**—No action has yet been taken.
137. Improvement of Crop Statistics in Bengal, Bihar and Orissa and Assam (paragraph 527).	**Bengal.**—The local Government agree that, while it would be desirable to improve the statistics regarding the other crops, the recommendation No. 10 regarding the extension to other crops in the permanently settled areas of the method now in use in collecting the statistics of jute production is, for the present, somewhat premature. The question raised in recommendation No. 11 regarding the occasional testing of the correctness of the formulæ used in arriving at the areas under mixed crops by actual field trials of the main types of mixtures found in a district, does not arise to any extent in Bengal. **Assam.**—There are considerable difficulties in the way of utilising the *panchayats* in the permanently settled areas, arising from the expense involved in checking and the burden it would cast upon them. The proposal was considered as long ago as 1915 but rejected for these reasons, and it is doubtful whether improved results could be obtained. The question may be reconsidered when the financial position is more favourable to the improvement of statistics.
138. Crop Cutting Experiments (paragraph 528).	**Bombay.**—In Sind, arrangements have been made by which junior revenue officers will be trained in making crop forecasts by the Agricultural department. **Bengal.**—The principle is accepted by the local Government. **United Provinces.**—No change has been made in existing practice. **Punjab.**—Crop-cutting experiments in the Punjab are conducted by officers of the Agricultural as well as of the Revenue departments. Detailed instructions have been issued, thereby minimising chances of any error. **Central Provinces.**—In Chhattisgarh, the Bihar and Orissa method of sampling rice is under trial. Use has been made of the settlement staff in the three districts of that division.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XVIII.—Statistics— *contd.*	
	Assam.—Mixed crops are not common in this province. The local Government agree that the system is capable of improvement when funds enable a larger agricultural staff and a statistical bureau to be maintained. Experiments for five years in regard to sugarcane indicate that there is great scope for inaccuracy and doubt where such experiments are carried out by two different staffs, though there was closer correspondence at the end of the period. On the whole, the results did not tend to discredit the work of the Land Revenue staff. **Baluchistan.**—These experiments are conducted by the Revenue department and no change has been made therein. **Delhi.**—During the year under report crop-cutting experiments were conducted on the following crops :— (1) *Desi* cotton (Irrigated), (2) *Desi* cotton (*Barani*), (3) Jowar (*Barani*) and (4) *Bajra* (*Barani*). **Coorg.**—Crop-cutting experiments are being conducted annually by the Land Records department in several villages throughout the province and their results are tabulated.
139. Appointment of a Statistical Assistant to Provincial Agricultural Departments (paragraph 538).	**United Provinces.**—No action has been taken. **Punjab.**—The creation of the post of Statistical Assistant is held up by the local Government on account of financial stringency. **Bihar and Orissa.**—The post of a Statistical Assistant has been sanctioned by Government as a temporary measure and a science graduate of the Patna University appointed to the post. **Assam.**—No action can be considered at present as many equally and more urgent improvements than the improvement of statistics are held up by lack of funds.
140. Appointment of provincial Statistical Officers (paragraph 538).	**Bombay.**—Proposals for the appointment of a Statistician and thorough reorganization of agricultural statistics were put up to Government by the Agricultural department but action has been deferred pending an improvement in the financial condition of the Presidency. **Bengal.**—The local Government agree in principle. **United Provinces.**—In connexion with the Board of Economic Inquiry, which is being constituted, a small bureau of statistics is to be attached to the office of the Director of Land Records. **Punjab.**—The creation of the post of Statistical Officer is held up by the local Government on account of financial stringency.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XVIII.—Statistics— *concld.*	
	Assam.—The local Government agree in principle but are of opinion that the appointment of an officer trained in economics and experienced in local conditions, if he could be found, is beyond the scope of practical politics, for difficulty is still found in providing sufficient officers of the necessary standing to carry on ordinary administration, and the local Government are not prepared to sacrifice control of administration for the financing of expensive statistical enquiries. The local Government agree that the mere multiplication of facts will not in itself mean progress.
	Delhi.—With effect from the year 1930, the Industrial Surveyor's Office undertook the collection, compilation and dissemination of statistics regarding prices of agricultural commodities.
141. Use of Non-official Agencies in collection of Agricultural Statistics. (Paragraph 541.)	**Bombay.**—The matter is receiving attention.
	Bengal.—The principle is accepted by the local Government.
	United Provinces.—A Board of Economic Inquiry is being constituted.
	Bihar and Orissa.—Preliminary enquiries from district officers do not give much promise of success in carrying out this recommendation even in one district as an experimental measure.
	Assam.—There are few, if any, non-official agencies in whom reliance could be placed for supply of statistical information. It is considered that, in the present state of development, the creation of a Government agency district from the revenue staff would be an unjustifiable burden on public revenues.
CHAPTER XIX.—The Agricultural Services. 142. Qualifications, Pay and Status of Directors of Agriculture. (Paragraph 547.)	**Bombay.**—Action has been taken (1) to raise the status of the Director of Agriculture from place No. 53 to place No. 36 on the Warrant of Precedence and (2) to place the Director of Agriculture, provided he is a member of the Indian Agricultural Service, on the list of officers eligible for the higher additional pension.
	Bengal.—Rules regulating the pay, allowances, pension, etc., of the Director of Agriculture have been framed in connection with the constitution of the Higher Bengal Agricultural Service in this province.
	United Provinces.—The Director of Agriculture, United Provinces, has been declared eligible for a higher grade additional pension, provided he is a member of the Indian Agricultural Service, and his status has been improved in the new Warrant of Precedence. The question of the Director's pay in connexion with the formation of the new provincial services, is still under consideration. The Provincial Executive Service officer who was appointed temporarily to relieve the Director of administrative work will revert to the regular line in April, 1931.
	Punjab.—The local Government have decided not to raise the pay of the Director at present, but the status of the post has been put on a par with the headships of other important departments. The higher grade additional pension has also been attached to the post when it is filled by a member of the Indian Agricultural Service.
	Central Provinces.—The pay of the Director has been fixed as laid down in the sub-paragraph in Schedule II of the Rules for the Central Provinces Agricultural Service, Class I.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIX.—The Agricultural Services—*contd.*	
a member of	**Assam.**—The local Government agree that the Director of Agriculture should be an officer combining administrative capacity with high scientific qualifications. For the present they have decided to employ an officer who was formerly of the Indian Agricultural Service and had retired on proportionate pension, on a 5 years' contract.
	North-West Frontier Province.—There is no separate Director of Agriculture in this province, his functions being performed, among many others, by the Revenue Commissioner. Sanction has, however, recently been received to the appointment for one year of a Development Commissioner from the Punjab who will take over control, *inter alia*, of the Agricultural, Veterinary and Co-operative departments.
143. Qualifications, Pay and Status of Principals of Agricultural Colleges. (Paragraph 547.)	**Bengal.**—There is no agricultural college in Bengal at present.
	United Provinces.—The question of pay, in connexion with the constitution of the new provincial services, is still under consideration.
	Central Provinces.—The pay of the Principal has been fixed as laid down in sub-paragraph in Schedule II of the Rules for the Central Provinces Agricultural Service, Class I.
	Assam.—There is no agricultural college in Assam.
144. Recruitment to and Organisation of the new Superior Provincial Agricultural Services. (Paragraphs 549—556 and 568.)	**Madras.**—It has been decided that there should be only one class of service called the Madras Agricultural Service on the grade of Rs. 250—25—750, with a selection grade of Rs. 800—25—1,000 for 10 per cent. of the cadre. The pay of the Director of Agriculture under the re-organized scale will be Rs. 1,000—50—1,500.
	Bombay.—It is proposed to constitute the new Bombay Agricultural Service (Classes I and II).
	Bengal.—Rules regulating the pay, allowances, pension, etc., of the Higher Bengal Agricultural Service have been issued.
	United Provinces.—The matter is still under consideration.
	Punjab.—The action taken on this recommendation has already been mentioned in the previous report. The Class I Provincial Agricultural Service has been constituted by Gazette notification, but no appointments to it have yet been made.
	Burma.—The Director of Agriculture has not yet reported on the recommendation laying down a post-graduate course as an essential qualification for direct recruitment of candidates trained in India. The question of passing a Public Service Act is still under consideration.
	Bihar and Orissa.—The proposal for the creation of the new Superior Provincial Agricultural Service is still under the consideration of the local Government.
	Central Provinces.—The Rules for the Central Provinces Agricultural Service, Class I, have been passed by the local Government.
	Assam.—The local Government are not in a position at present to contemplate provision for expert agricultural research, nor are they concerned with teaching posts. They agree that a considerable number of

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XIX.—The Agricultural Services—*concld.*	
	vacancies in any new superior service must fall to officers who have qualified by experience of, and proved merit in, local administration. They also agree that academic qualifications and practical experience of agriculture are required. The small numbers that will be required for years to come preclude any necessity for further elaboration. Two officers of the provincial service have already been promoted to special posts of Deputy Director of Agriculture in prospect of the formation of new superior services.
	North-West Frontier Province.—Proposals for the expansion of the staff were submitted to the Government of India
145. Interchange of Officers between Provinces for Study of Special Problems. (Paragraph 557.)	**Assam.**—Theoretically, the local Government share the hope that co-operation between provinces will be maintained.
146. Grant of Study Leave to officers of new Superior Provinical Agricultural Services. (Paragraph 559.)	**Bombay.**—This recommendation has been kept in abeyance owing to financial stringency. The need for this facility is pressing in connection with the proper organization of research on virus diseases in this Presidency.
	United Provinces. Action will be taken when the new superior provincial agricultural services have been constituted. Meanwhile all applications for study leave to members of the existing service are considered on their merits and such leave is given in the interests of public service.
	Assam.—Since research work on any notable scale cannot be contemplated, and most local problems are familiar to the north eastern part of India, the occasions upon which study leave in Europe will be advantageous are expected to be rare.
CHAPTER XX.—Miscellaneous.	
147. Establishment of Local Self-Government Institutes. (Paragraph 576.)	**Bengal.**—It was proposed to discuss the matter at a meeting of the Local Self-Government Standing Committee. The Committee having failed twice, it is proposed to circulate the scheme to local bodies to see if the general idea is acceptable to them.
	Burma.—For the present nothing can be done on this recommendation. Complicated questions of organization and taxation will first have to be settled, and these must now presumably await the advent of the new constitution.
	Assam.—Conferences between representatives of the local authorities in the Surma Valley for particular purposes have occasionally been held, and in the last two years a "Surma Valley Local Bodies' Conference" has been held. This, however, was actually attended only by representatives of the local bodies in one district, Sylhet. The suggestion of a regular provincial Local Self-Government Conference has been made in non-official quarters. No action has been taken by the Ministry in this direction. Travelling is expensive, and the session of Council have hitherto provided the most convenient means for informal discussion of common problems. The establishment of an Institute is not contemplated. The Minister for Local Self-Government decided in 1922 that no Local Self-Government Board, advisory or otherwise, should be considered until there was a definite demand from the public, which then appeared loath to agree to any organisation that might mean interference with the local bodies.

Subject (with paragraph of the Report).	Action taken by the Government (or Administration).
CHAPTER XX.—Miscellaneous *—concld.*	
148. Establishment of Meteorological Stations of the "second order" on experimental farms in areas in which climatic conditions are of importance. (Paragraph 577.)	**Bengal.**—A scheme for the establishment as an experimental measure for five years, of a meteorological station of the "second order" on the Dacca farm has been administratively approved by the local Government and is awaiting provision of funds. **Punjab.**—The action taken on this recommendation has already been mentioned in the previous report. Sets of special equipment have since been provided on a number of farms. **Burma.**—The local Government have decided that, under the conditions prevailing in Burma at present, it is not necessary to establish meteorological stations at the agricultural farms in the province. **Bihar and Orissa.**—Records of temperature, humidity, rainfall, etc., continue to be kept in the Botanical Section at Sabour. Correspondence for opening a second class observatory at Sabour is in progress with the Meteorological department. **Assam.**—Climatic conditions scarcely represent an immediate problem in this province. Instructions have however been issued that humidity and maximum temperature should be recorded at the departmental farms.

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